

ACADEMIC CURRICULA

POST-GRADUATE PROGRAMME

Course Structure & Detailed Syllabi for students
admitted in online courses.



KIIT UNIVERSITY
(Declared U/S 3 of UGC Act, 1956)
Bhubaneswar, Odisha, India

All the precautions have been taken to print the Course Curriculum accurate. However, mistakes if any will be corrected as and when noticed. The University reserves the right to include/exclude any content at any point of time during the progression of the course.

Learning Outcome-Based Curriculum Framework (LOCF)

KIIT, DEEMED TO BE UNIVERSITY
Declared u/s 3 of UGC Act, 1956
Bhubaneswar, Odisha, India



COURSE STRUCTURE FOR **M.A. (ECONOMICS)**

Semester-II

Sl. No.	Course Code	Subject	L	T	P	Total Contact Hours	Credits
2.1	OES6002	Microeconomics II	4	-	-	4	4
2.2	OES6004	Macroeconomics II	4	-	-	4	4
2.3	OES6006	Public Economics	4	-	-	4	4
2.4	OES6008	Industrial Economics	4	-	-	4	4
2.5	OES6012	Basic Econometrics	3	1	-	4	4
2.6	OES6014	Research Methodology	3	1	-	4	4
Semester Total Credits							24

Semester-III

Sl. No.	Course Code	Subject	L	T	P	Total Contact Hours	Credits
3.1	OES7001	International Economics	4	-	-	4	4
3.2	OES7003	Economic Growth and Development	4	-	-	4	4
3.3	OES7081	Summer Internship Program	-	-	4	4	2
		Specialization(Financial Economics I)					
3.4.1	OES7101	Financial Economics	3	1	-	4	4
3.4.2	OES7103	International Finance	3	1	-	4	4
3.4.3	OES7105	Financial Econometrics	3	1	-	4	4
		Specialization(Public Policy I)					
3.5.1	OES7201	Law and Economics	3	1	-	4	4
3.5.2	OES7203	Agricultural Economics	3	1	-	4	4
3.5.3	OES7205	Technology & Public Policy	3	1	-	4	4
		Specialization (Corporate Economics I)					
3.6.1	OES7301	Corporate Finance	3	1	-	4	4
3.6.2	OES7303	Corporate Governance	3	1	-	4	4
3.6.3	OES7305	Advanced Business Economics	3	1	-	4	4
Semester Total Credits							26

Semester-IV

Sl. No.	Course Code	Subject	L	T	P	Total Contact Hours	Credits
4.1	OES7002	Indian Economic Policy	3	1	-	4	4
4.2	OES7004	Environmental Economics	4	-	-	4	4
4.3	OES7082	Dissertation	-	-	12	12	6
		Specialization(Financial Economics II)					
4.4.1	OES7102	Financial Modeling	3	1	-	4	4
4.4.2	OES7104	Financial Risk Management	3	1	-	4	4
4.4.3	OES7106	Data Analytics	3	1	-	4	4
		Specialization(Public Policy II)					

4.5.1	OES7202	Health Economics	3	1	-	4	4
4.5.2	OES7204	Climate Change and Disaster Management	3	1	-	4	4
4.5.3	OES7206	State, Market & Economic Policy	3	1	-	4	4
		Specialization (Corporate Economics II)					
4.6.1	OES7302	MNCs and Industrial Technology	3	1	-	4	4
4.6.2	OES7304	Corporate Risk Management	3	1	-	4	4
4.6.3	OES7306	Capital Market	3	1	-	4	4
Semester Total Credits							30
Grand Total Credit							104

COURSE STRUCTURE FOR **MASTER OF COMMERCE**

Semester-I

Sl. No.	Course Code	Subject	L	T	P	Total Contact Hours	Credits
1.1	OCB6001	Advanced Accounting	3	1	-	4	4
1.2	OCB6003	Advanced Financial Management	3	1	-	4	4
1.3	OCB6005	Advanced Marketing	3	1	-	4	4
1.4	OCB6007	Corporate Legal Framework	3	1	-	4	4
1.5	OCB6009	Organizational Behavior	3	1	-	4	4
1.6	OCB6011	Information Technology for Business	2	1	2	5	4
Semester Total Credits							24

Semester-II

Sl. No.	Course Code	Subject	L	T	P	Total Contact Hours	Credits
2.1	OCB6002	Advanced Cost and Management Accounting	3	1	-	4	4
2.2	OCB6004	Managerial Economics	3	1	-	4	4
2.3	OCB6006	International Business Environment	3	1	-	4	4
2.4	OCB6008	Dynamics of Banking & Insurance	3	1	-	4	4
2.5	OCB6012	Human Capital Development	3	1	-	4	4
2.6	OCB6014	Research Methodology and Basic Econometrics	2	1	2	5	4
Semester Total Credits							24

Semester-III

Sl. No.	Course Code	Subject	L	T	P	Total Contact Hours	Credits
3.1	OCB7001	Forensic Accounting and Auditing	3	1	-	4	4
3.2	OCB7003	Quantitative Techniques and Operational Research	3	1	-	4	4
3.3	OCB7081	Summer Internship & Project	-	-	4	4	2
		Specialization (Accounting and Finance)					
3.4.1	OCB7101	IFRS and Ind AS	3	1	-	4	4
3.4.2	OCB7103	GST and Customs Laws	3	1	-	4	4
3.4.3	OCB7105	International Finance	3	1	-	4	4
		Specialization (International Business and Marketing)					
3.5.1	OCB7201	Consumer Behavior	3	1	-	4	4
3.5.2	OCB7203	International Supply Chain Management	3	1	-	4	4
3.5.3	OCB7205	Global Business Ethics	3	1	-	4	4
		Specialization (Leadership and Human Resource)					
3.6.1	OCB7301	Human Resource Planning and Development	3	1	-	4	4

3.6.2	OCB7303	Human Resource Information System	3	1	-	4	4
3.6.3	OCB7305	Leadership Theory & Practices	3	1	-	4	4
		Specialization (Banking and IT)					
3.6.1	OCB7401	Bank Management and FinTech	3	1	-	4	4
3.6.2	OCB7403	Investment and Risk Management	3	1	-	4	4
3.6.3	OCB7405	International Banking and Finance	3	1	-	4	4
Semester Total Credits							26

Semester-IV

Sl. No.	Course Code	Subject	L	T	P	Total Contact Hours	Credits
4.1	OCB7002	Strategic Management	3	1	-	4	4
4.2	OCB7004	Business Analytics	3	1	-	4	4
4.3	OCB7082	Dissertation	-	-	12	12	6
		Specialization (Accounting and Finance)					
4.4.1	OCB7102	International Accounting and Corporate Reporting	3	1	-	4	4
4.4.2	OCB7104	Corporate Tax Planning	3	1	-	4	4
4.4.3	OCB7106	Investment Management and Derivatives	3	1	-	4	4
		Specialization (International Business and Marketing)					
4.5.1	OCB7202	Customer Relationship Management	3	1	-	4	4
4.5.2	OCB7204	International Marketing	3	1	-	4	4
4.5.3	OCB7206	International Trade Practices	3	1	-	4	4
		Specialization (Leadership and Human Resources)					
4.6.1	OCB7302	Industrial Relations and Labour Law	3	1	-	4	4
4.6.2	OCB7304	Organizational Conflict and Change Management	3	1	-	4	4
4.6.3	OCB7306	Human Resource Audit and Human Capital Accounting	3	1	-	4	4
		Specialization (Banking and IT)					
4.7.1	OCB7402	Data Science for Business	3	1	-	4	4
4.7.2	OCB7404	Forex Management	3	1	-	4	4
4.7.3	OCB7406	Banking and Insurance Law	3	1	-	4	4
Semester Total Credits							30
Grand Total Credit							104

COURSE STRUCTURE FOR
MASTER OF BUSINESS ADMINISTRATION (MBA)

Semester I

Sl. No.	Course Code	Subject	L	T	P	Total Contact Hours	Credit
1	OBM60301	Marketing Management – I	2	0	0	30	2
2	OBM60204	Accounting for Managers	2	0	0	30	2
3	OBM60103	Organizational Behavior	2	0	0	30	2
4	OBM60401	Managerial Economics – I	2	0	0	30	2
5	OBM60503	Quantitative Techniques – I	2	0	0	30	2
6	OBM60601	Information Technology for Managers	2	0	0	30	2
7	OBM60701	Business Communication	2	0	0	30	2
8	OBM60702	Legal Aspects of Business	2	0	0	30	2
9	OBM60102	Human Resource Management	2	0	0	30	2
10	OBM60803	Production & Operations Management – I	2	0	0	30	2
Semester Total Credits							20

Semester II

Sl. No.	Course Code	Subject	L	T	P	Total Contact Hours	Credit
11	OBM60302	Marketing Management – II	2	0	0	30	2
12	OBM60202	Cost and Management Accounting	2	0	0	30	2
13	OBM60403	Managerial Economics – II	2	0	0	30	2
14	OBM60205	Corporate Finance – I	2	0	0	30	2
15	OBM60104	Organization Theory	2	0	0	30	2
16	OBM60804	Production and Operations Management II	2	0	0	30	2
17	OBM60502	Business Research Methods	2	0	0	30	2
18	OBM60504	Quantitative Techniques – II	2	0	0	30	2
19	OBM60703	Business Ethics and Corporate Social Responsibility	2	0	0	30	2
20	OBM60829	Business Analytics	2	0	0	30	2
Semester Total Credits							20
On-the-job Training							8

Semester III

Sl. No.	Course Code	Subject	L	T	P	Total Contact Hours	Credit
21	OBM60704	Strategic Management	2	0	0	30	2
Semester Credits							2
The semester will also have 16 credits in 8 elective courses							

Semester IV

Sl. No.	Course Code	Subject	L	T	P	Total Contact Hours	Credit
There will be no core courses in the semester and 12 credits in 6 elective courses							

Area wise courses**Area: Strategic Management**

Sl. No.	Course Code	Subject	L	T	P	Credit
Core Courses						
1	OBM60702	Legal Aspects of Business	2	0	0	2
2	OBM62702	Business Communication	1.5	0	0.5	2
3	OBM62703	Business Ethics and Corporate Social	1.5	0	0.5	2
4	OBM62704	Strategic Management	1.5	0	0.5	2
Elective Courses						
1	OBM62705	Block chain Applications in Business	1.5	0	.5	2

Area: Business Economics

Sl. No.	Course Code	Subject	L	T	P	Credit
Core Courses						
1	OBM60401	Managerial Economics – I	2	0	0	2
2	OBM60403	Managerial Economics – II	2	0	0	2
Elective Courses						
1	OBM62219	Industrial Economics & Financing	1.5	0	0.5	2
2	OBM62401	Sustainable Development	1.5	0	0.5	2
3	OBM62402	Macroeconomic and Financial Challenges: Covid 19	1.5	0	0.5	2

Area: Marketing Management

Sl. No.	Course Code	Subject	L	T	P	Credit
Core Courses						
1	OBM60301	Marketing Management – I	2	0	0	2
2	OBM60302	Marketing Management – II	2	0	0	2
Elective Courses						
1	OBM62301	Consumer Behavior	1.5	0	0.5	2
2	OBM62302	Product and Brand Management	1.5	0	0.5	2
3	OBM62303	Services Marketing	1.5	0	0.5	2
4	OBM62305	Retail Management	1.5	0	0.5	2
5	OBM62306	B2B Marketing	1.5	0	0.5	2
6	OBM62307	Real Estate Marketing	1.5	0	0.5	2
7	OBM62308	Customer Relationship Management	1.5	0	0.5	2
8	OBM62309	Integrated Marketing Communication	1.5	0	0.5	2
9	OBM62310	Hospitality & Tourism Marketing	1.5	0	0.5	2
10	OBM62311	Marketing Research	1.5	0	0.5	2
11	OBM62312	Digital and Social Media Marketing	1.5	0	0.5	2
12	OBM62313	Agency & Media Management	1.5	0	0.5	2
13	OBM62314	Pricing Management *	1.5	0	0.5	2
14	OBM62304	Sales & Distribution Management	1.5	0	0.5	2
15	OBM62315	Digital Marketing Analytics	1.5	0	0.5	2

* Offered in both Marketing & Finance Area

Area: Financial Management

Sl. No	Course Code	Subject	L	T	P	Credit
Core Courses						
1	OBM62204	Accounting for Managers	1.5	0	0.5	2
2	OBM60202	Cost and Management Accounting	2	0	0	2
3	OBM60205	Corporate Finance – I	2	0	0	2
Elective Courses						
1	OBM62213	Corporate Finance-II	1.5	0	0.5	2
2	OBM62206	Security Analysis & Portfolio Management	1.5	0	0.5	2
3	OBM62201	International Financial Management	1.5	0	0.5	2
4	OBM62214	Financial Reporting and Corporate Governance	1.5	0	0.5	2
5	OBM62223	Banking & Financial Services	1.5	0	0.5	2

6	OBM62204	Mergers, Acquisitions & Corporate Restructuring	1.5	0	0.5	2
7	OBM62216	Project & Infrastructure Finance	1.5	0	0.5	2
8	OBM62207	Derivatives & Risk Management	1.5	0	0.5	2
9	OBM62210	Business Analysis and Valuation	1.5	0	0.5	2
10	OBM62211	Management Control System	1.5	0	0.5	2
11	OBM62217	Financial Time Series & Analysis	1.5	0	0.5	2
12	OBM62218	Risk Management in Banks	1.5	0	0.5	2
13	OBM62220	Fixed Income and Alternative Investment	1.5	0	0.5	2
14	OBM62221	Financial Markets and Regulation	1.5	0	0.5	2
15	OBM62222	Quantitative Finance Using R	1.5	0	0.5	2
16	OBM62314	Pricing Management *	1.5	0	0.5	2
17	OBM62224	Behavioural Finance	1.5	0	0.5	2

* The course details are given in Marketing Management area

Area: Human Resource Management

Area: Human Resource Management						
Sl. No.	Course Code	Subject	L	T	P	Credit
Core Courses						
1	OBM60103	Organizational Behavior	2	0	0	2
2	OBM60104	Organization Theory	2	0	0	2
3	OBM62102	Human Resource Management	1.5	0	0.5	2
Elective Courses						
1	OBM62115	HR Planning and Selection	1.5	0	0.5	2
2	OBM62116	Labor Laws and Industrial Relations	1.5	0	0.5	2
3	OBM62111	Performance Management Systems	1.5	0	0.5	2
4	OBM62834	HR Analytics*	1.5	0	0.5	2
5	OBM62113	Compensation and Reward Management	1.5	0	0.5	2
6	OBM68108	Managerial Effectiveness	Sessional			2
7	OBM62117	HR Value Proposition and HR Scorecard	1.5	0	0.5	2
8	OBM62107	Leadership for Corporate Excellence	1.5	0	0.5	2
9	OBM62105	Organization Development and Change	1.5	0	0.5	2
10	OBM62118	HR Accounting and HR Audit-New Course	1.5	0	0.5	2
11	OBM62119	Human Resource Development (T&D)	1.5	0	0.5	2
12	OBM62120	Strategic Human Resource Management	1.5	0	0.5	2
13	OBM62121	Competency Mapping and Building the Talent Pipeline	1.5	0	0.5	2
14	OBM62122	Managing Employee Engagement	1.5	0	0.5	2

Area: Operations Management

Sl. No.	Course Code	Subject	L	T	P	Credit
Core Courses						
1	OBM60803	Production & Operations Management – I	2	0	0	2
2	OBM62804	Production and Operations Management – II	1.5	0	0.5	2
Elective Courses						
1	OBM62808	Supply Chain Management	1.5	0	.5	2
2	OBM62807	Total Quality Management	1.5	0	.5	2
3	OBM62611	IT Project Management*	1.5	0	.5	2
4	OBM62814	Machine Learning & Artificial Intelligence*	1.5	0	.5	2
5	OBM62610	E-Business*	1.5	0	.5	2
6	OBM62612	Internet of Things*	1.5	0	.5	2
7	OBM62607	Enterprise Resource Planning Systems*	1.5	0	.5	2
8	OBM62601	Data Mining and Business Intelligence*	1.5	0	.5	2
9	OBM62815	Managing Service Operations	1.5	0	.5	2
10	OBM62809	Project Management	1.5	0	.5	2

* Courses are also offered in Information Technology Management (ITM) area. Course details are given under ITM area.

Area: Information Technology Management

Area: Information Technology Management						
Sl. No.	Course Code	Subject	L	T	P	Credit
Core Courses						
1	OBM60601	Information Technology for Managers	2	0	0	2
Elective courses						
1	OBM62611	IT Project Management	1.5	0	.5	2
2	OBM62814	Machine Learning & Artificial Intelligence	1.5	0	.5	2
3	OBM62610	E-Business	1.5	0	.5	2
4	OBM62612	Internet of Things	1.5	0	.5	2
5	OBM62607	Enterprise Resource Planning Systems	1.5	0	.5	2
6	OBM62601	Data Mining and Business Intelligence	1.5	0	.5	2

Area: Business Analytics

Sl. No.	Course Code	Subject	L	T	P	Credit
Core Course						
1	OBM60503	Quantitative Techniques – I	2	0	0	2
2	OBM60504	Quantitative Techniques – II	2	0	0	2
3	OBM60829	Business Analytics	2	0	0	2
4	OBM60502	Business Research Methods	2	0	0	2
Elective Courses						
1	OBM62837	Data Analytics Using R	1.5	0	0.5	2
2	OBM62830	Advanced Business Analytics	1.5	0	0.5	2
3	OBM62831	Introduction to marketing analytics	1.5	0	0.5	2
4	OBM62832	Supply Chain Analytics	1.5	0	0.5	2
5	OBM62833	Analytics Toolbox	1.5	0	0.5	2
6	OBM62834	HR Analytics	1.5	0	0.5	2
7	OBM62835	Credit Risk Analytics	1.5	0	0.5	2
8	OBM62836	Advanced Statistics and Probability for Data	1.5	0	0.5	2
9	OBM62814	Machine Learning & Artificial Intelligence using	1.5	0	0.5	2
10	OBM62601	Data Mining and Business Intelligence	1.5	0	0.5	2
11	OBM62838	Multivariate Data Analysis	1.5	0	0.5	2
12	OBM62839	Predictive Analytics using SAS	1.5	0	0.5	2
13	OBM62840	Text Mining and Analytics	1.5	0	0.5	2

COURSE STRUCTURE FOR
MASTER OF COMPUTER APPLICATIONS (MCA)

FIRST SEMESTER

THEORY						
SL. NO.	COURSE CODE	COURSE	L	T	P	CREDITS
01	OMC40101	Programming and Data Structures	3	-	-	3
02	OMC40103	Computer Organization and Architecture	3	-	-	3
03	OMC40105	Discrete Mathematics	3	-	-	3
04	OMC40107	Database Management System	3	-	-	3
05	OMC40109	Operating Systems	3	-	-	3
PRACTICAL						
06	OMC49101	Programming and Data Structures Lab	-	-	4	2
07	OMC49103	Database Management System Lab	-	-	4	2
08	OMC49105	Soft skills Lab	-	-	2	1
SESSIONAL						
09	YG18001	Yoga and Human Consciousness	-	-	2	2
TOTAL			-	-	-	23

SECOND SEMESTER

SL. NO.	COURSE CODE	COURSE	L	T	P	CREDITS
01	OMC40102	Computer Networks	3	-	-	3
02	OMC41104	Design and Analysis of Algorithms	3	1	-	4
03	OMC40106	Object Oriented Programming	3	-	-	3
04	OMC40108	Software Engineering	3	-	-	3
05	OMC40112	Artificial Intelligence	3	-	-	3
PRACTICAL						
06	OMC49102	Java Lab	-	-	4	2
07	OMC49104	Machine Learning Lab	-	-	4	2
08	OMC49106	Professional Communication Lab	-	-	2	1
TOTAL			-	-	-	21

THIRD SEMESTER

THEORY						
SL. NO.	COURSE CODE	COURSE	L	T	P	CREDITS
01	OMC50101	Big Data Analytics	3	-	-	3
02	OMC51103	Information and Cyber Security	3	1	-	4
03	OMC50105	Cloud Computing	3	-	-	3
04		Elective -1	3	-	-	3
05		Elective - 2	3	-	-	3
PRACTICAL						
06	OMC59101	Data Analytics Lab	-	-	4	2
07	OMC59103	Advanced Java Lab	-	-	4	2
TOTAL			-	-	-	20

FOURTH SEMESTER

The entire fourth semester is devoted to practice orientation and training. During the semester students have to undertake compulsory project-oriented training for 120 days and submit a project report based on the work done for evaluation.

SESSIONALS						
SL. NO.	COURSE CODE	COURSE	L	T	P	CREDITS
01	OMC58102	Seminar	-	-	-	6
02	OMC57104	Project Work	-	-	-	8
03	OMC58106	Viva Voce	-	-	-	4
TOTAL			-	-	-	18

CREDIT DISTRIBUTION				
Semester 1	Semester 2	Semester 3	Semester 4	Total
23	21	20	18	82

Semester 1	Semester 2	Semester 3	Semester 4	Total
23	21	20	18	82

ELECTIVES

Elective - 1

- OMC50121 - Object Oriented Analysis and Design
- OMC50123 - Web Technology
- OMC50125 - Natural Language Processing
- OMC50127 - Software Testing and Quality Assurance
- OMC50129 - Management Support System
- OMC50131 - Mobile Applications development

Elective - 2

- OMC50141 - Software Project Management
 - OMC50143 - Computer Graphics
 - OMC50145 - Soft Computing
 - OMC50147 - Mobile Computing
 - OMC50149 - Block Chain Architecture
 - OMC50151 - Compiler Design
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MASTER OF ARTS (ECONOMICS)

[M. A (ECO)]

COURSE STRUCTURE & SYLLABUS

Master of Arts (Economics)

The Master of Arts (MA) Programme offered by Department of Economics; School of Social, Financial and Human Sciences, KIIT University is 2 years Postgraduate Programme in Economics.

The education system in the emerging scenario demands to enrich the students so as to develop holistic personality. Therefore, the focus is based on the four pillars of education which are learning to know, learning to do, learning to live together, and learning to be. The present situation of economic and financial education requires total over-hauling and restructuring in the light of changed socio-economic scenario of the global economy. The dynamic nature of global business demands a pool of competent human capital for which relevant education is essential in terms of timeliness, speed, flexibility, and dynamism.

With a curriculum design that reflects the best and updated Economics papers and practice, and the objective of the programme is to impart Economics education with an employability outlook. The focus being to prepare students as future-ready i.e., to become entrepreneurs, economic analysts or senior level executives in the private and public sector industries or pursue higher education, by equipping students with a holistic view of the economic environment and its operations. The thrust of the programme is on personality development of the students by helping them acquire conceptual, analytical, problem-solving capabilities and emotional maturity. The innovative curriculum and proven pedagogy will equip participants with actionable knowledge and skills along with deep insights into leadership and strategy.

The programme's teaching methodology and approach are designed to leverage technology and to maximise interaction seamlessly and simultaneously. The programme follows a pedagogy that is a blend of Lectures, Case Studies, Lecture-discussions, Behavioural and Computer-based Simulation Projects, Assignments, Class Presentations, Quizzes, etc.

The salient features of MA Economics Course Curriculum are:

- The duration of the MA Economics course is two academic years split into four semesters with a total of 104 credits. Keeping in view the needs of the Economics students, Ability & Skill Enhancement Courses have been designed in a manner that provides relevant knowledge and skills. In all, twenty-six courses/papers have been developed with an idea to encompass a possible domains of knowledge and skills. **Note:** Sessional/Practical papers (Codes: 81 – 99).
- The objectives are to mentally prepare the students to learn various courses/ subjects in the domain of Economics and Business leading to a Master degree.
- Keeping in view the objectives and learning outcomes outlined in each course, proper care has been taken, to provide practical exercises for each unit in a course, so that the students gain hands-on experience (learning by doing) apart from textbook-based theoretical knowledge.
- Summer Internship of 6 to 8 weeks' duration after completion of the second Semester, followed by Project Report and Viva-voce examination during the third semester has been made compulsory to enable the students to have hands-on experience in real-life situations.
- Dissertation/Project work has been provided in the fourth semester involving application of knowledge in exploring/critical analysis/solving issues related to a real-life situation. The courses are designed keeping in view the employability, research, and innovation in the field of Economics.

- The learning outcomes for each course has been carefully designed to help students to have experiential learning in various domains of Economics discipline.
- The teachers are expected that while delivering a lecture in a classroom situation, they should use ICT based teaching learning andragogy and various interactive teaching and learning techniques like case studies, simulation, role play, etc., to have better engagement of the students in an effective teaching learning process. It is also expected that character building of student development of holistic personality, values and ethics, etc., should be the prime focus in the teaching learning process so that they become good global citizens.

Aims of MA Economics as a programme is to:

- Provide a conducive environment that holistically engages students through an all encompassing knowledge dissemination
- Widen the scope and sharing in-depth knowledge of the course enabling them to undertake further studies in Economics and its allied areas
- Construct a sound theoretical footing, where standards are acquainting with the changing market practices
- Encourage the students to be habituated with advanced range of generic skills those are helpful in employment, internships, and social activities
- Formulating real-life business problems and provide innovative solutions to enable the student to be future ready management leaders who are compassionate and yet efficient and effective in managing as such

In order to achieve the programme goals following measures would be adopted:

- Regulatory curriculum reform based on a Learning Outcomes-based Curriculum Framework
- Enriching the quality of teaching and research by using modern tools and techniques
- Involving students in research promotion, discussions, problem-solving, case analysis and out of the box thinking
- Motivating the students to understand various concepts of Economics and apply them in real life situations
- Acquaint the students in involving future research promotion

Exam Evaluation Scheme:

The MA Economics Programme will follow a continuous examination and evaluation system in the following pattern:

Activity-based Learning (Class Participation, Assignments, Quiz, Class tests, Presentation, etc.)	30 Marks
Mid-Semester (Written Exam – 1 Hour)	20 Marks
End-Semester (Written Exam – 2 Hours)	<u>50 Marks</u>
Total	<u>100 Marks</u>

The evaluation system for Sessional/Practical Papers will be as follows:

Dissertation/Project Report	50 Marks
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Presentation, & Viva-voce

50 Marks

Total

100 Marks

System of Evaluation (Grading System)

A seven-point grading system on a 10-point scale is followed for grading in the examinations. The details are given in a table below:

<u>Qualification</u>	<u>Grade</u>	<u>Score on 100</u>	<u>Point</u>
Outstanding	'O'	90 to 100	10
Excellent	'E'	80 to 89	9
Very good	'A'	70 to 79	8
Good	'B'	60 to 69	7
Fair	'C'	50 to 59	6
Below average	'D'	40 to 49	5
Failed	'F'	Below 40	2

CREDIT POINT = CREDIT X POINT for each course item.

CREDIT INDEX (CI) = \sum CREDIT POINT of all course items in a semester.

Semester Grade Point Average

SGPA = CI / \sum CREDITS (for a semester)

Cumulative Grade Point Average

$$CGPA = \frac{[\sum CI \text{ of all previous semesters upto current semester}]}{[\sum CREDITS \text{ of all previous semesters including the current semester}]}$$

SEMESTER I

Paper 1.1 Microeconomics I OES6001 (Credit 4)

OBJECTIVES:

The Microeconomics course is designed to provide students with advanced topics in the field of consumer behavior, production, and markets which are not normally covered in an undergraduate program.

CONTENT:

Unit I: Consumer Behavior and Demand Consumer Preferences

Opportunity sets, optimum choices, indirect utility demand functions, income and substitution effects, Slutsky equation, normal versus inferior goods, types of demand functions, elasticity, welfare evaluation, consumer surplus, equivalent variation and compensating variation, revealed preference (weak and strong axioms).

Unit II: Utility Functions and Expected Utility Theorem

Expected utility function, measures of risk aversion, state-preference approach, portfolio theory and pricing of risk, present discounted value approach to investment decisions, adjustments for risk.

Unit III: Production and Cost

Production functions, types of production functions (Cobb-Douglas, CES, Leontief, VES), marginal product rate of technical substitution, technical progress, cost functions, average and marginal costs, short run versus long run costs, economies of scale and scope, profit maximization, cost minimization, derivation of input demand.

Unit IV: Competitive Markets

Assumptions of perfect market, competitive markets – demand and supply, demand and supply curves of individual firms, short-run versus long-run, competitive market equilibrium, tax incidence analysis, price controls and shortages.

Unit V: Imperfect Competition

Market failure, imperfect markets, sources of monopoly power, monopoly market equilibrium, price discrimination – first, second and third degree, tax incidence, oligopoly, Cournot Model, Stackelberg model, Bertrand Model, Monopolistic Competition.

Course Outcome: Upon the successful completion of this course, students will be able to:

Possess an understanding of the basic principles of microeconomics, the Marginalist approach and the justification of mathematical models to describe consumer and firm behavior

Understand the concepts of micro economic skills to analyse problems of economic policy

Improve analytical skills and ability to solve problems, which will be useful in several other areas of economics

Analyse operation of different market structure
Understand to evaluate welfare loss in non-competitive markets

Textbook

H L Ahuja, Advanced Economic Theory, S Chand

References

Varian, H. R., Microeconomic Analysis, third edition, W.W. Norton and Co., 1992.
Walter Nicholson, Christopher M. Snyder, Microeconomic Theory: Basic Principles and Extensions, Cengage Learning.
Jehle and Reny, Advanced Microeconomic Theory, Pearson India.
Mas-Collel, Whinston and Green (1995): Micro-economic Theory, OUP.
Gravelle, H and R. Rees: Microeconomics, Pearson Education, 3rd Edition, 2004.
Henderson, M. and R.E. Quandt, Microeconomic Theory: Mathematical Approach, McGraw Hill, 3rd edition
Koutsoyiannis. A. "Modern Microeconomics" (Macmillan Press Limited, New York)
UGC Pathsala Mock Courses-Epathasla (p12 M16):
<https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=11>
Varian, H. R., Intermediate Microeconomics: A Modern Approach, third edition, 2010.
Nicholson, W., Microeconomic Theory: Basic Principles and Extensions, eighth edition, South Western Thomson Learning, 2002.

Paper 1.2 Macroeconomics I OES6003 (Credit 4)

OBJECTIVES:

This course has been designed to provide understanding of macroeconomics by specially focusing on macroeconomic variables and policies. The paper is positioned in the context of Indian macro economy, aiming to show how theoretical and empirical knowledge of macroeconomic variables, indicators and policy measures in decision making by businesses and investors.

CONTENT:

Unit I: Measuring Key Macroeconomic Variables

Various Concepts and Measurements of Aggregate Income – Income, Expenditure and the Circular Flow
Rules for Computing GDP – Real versus Nominal GDP, Measuring the Cost of Living (consumer and wholesale price indices), Measuring the Unemployment Rate – Unemployment, GDP and the Okun's Law.

Unit II: Theories of Consumption

The Classical Views on Consumption – The Psychological Law of Consumption – Kuznets's Consumption Puzzle – Fisher's Inter-temporal Choice Model – Permanent Income Hypothesis – Life Cycle Hypothesis.

Unit III: Theories of Investment

The Neoclassical Theory of Investment – Capital Theory and Theory of the Firm – Finance and the Cost of Capital

Capital – The Accelerator Theory of Investment – The Stock Market and Tobin's Q Theory – Inflation and Investment – Policies affecting Investment.

UNIT IV: IS-LM model (closed economy)

The Neoclassical and Keynesian macroeconomic models – The interaction of real and monetary models – the Neoclassical and Keynesian version of IS-LM model – fiscal and monetary analysis in IS-LM model – fiscal policy and crowding out effect – Ricardian equivalence – the relative efficacy of fiscal and monetary policy – the Aggregate supply in the short and long run – Aggregate demand and price determination – Pigou effect and Real Balance effect in the IS-LM model.

Unit V: Open Economy Macroeconomics

Interest rate Parities across Countries, Effectiveness of Monetary and Fiscal Policies in an Open Economy, Impossible Trilemma Trade-offs. The Mundell-Fleming Model – The Fiscal and Monetary Policy Operation under Fixed and Floating Exchange Rate Regime – Trade Policy in IS-LM Models.

Course Outcome: After completion of this paper student will be able to:

- Acquire a fair degree of Proficiency in National Income accounting
- Build Competence in National Income Determination and various sectoral models
- Have Better Idea about the theories of Consumption & Investment
- Develop an understanding of the concept of Inflation and its social costs
- Know the IS-LM Model and different equilibrium conditions in case of closed and open economy

Textbook

Mankiw, N. Gregory. Macroeconomics. New York: Worth Publishers, 2003.

References

- Rosalind Levacic and Alexander Reibmann (1982), Macroeconomics: An Introduction to Keynesian Neoclassical Controversies, Macmillan.
- Errol D'Souza (2008), Macroeconomics, Pearson.
- E-Pathasala: <https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=>

Paper 1.3 **Mathematical Methods for Economics** **OES6005 (Credit 4)**

OBJECTIVES:

The objective is to rigorously introduce and teach several areas of mathematics that are widely-used in Microeconomics, Macroeconomics and Econometrics.

CONTENT:

Unit I: Sets, relations and functions

Unit II: Linear Algebra

Vector spaces, subspaces. Convex sets, concave and quasi-concave functions, and their characterisations. Linear independence, Linear mappings, and matrix representation. Range, null space, rank-nullity theorem.

Unit III: Basic Real Analysis

In normed spaces, notions of open, closed, and compact sets, continuous functions, their optima and their existence. Notions of differentiability of mappings between Euclidean spaces, chain rule, higher order derivatives. Implicit and inverse function theorem, comparative statics.

Unit IV: Differential Equations

First-order and systems of first-order differential equations (linear and nonlinear); some stability theory.

Unit V: Optimization

Characterizations of differentiable concave and quasi-concave functions. Characterisation of interior optima. Lagrange characterisation of optima subject to equality constraints. Karush-John-Kuhn-Tucker characterisation of optima subject to inequality constraints.

Course Outcome: The approach of the course will be analytical, so that we expect as a learning outcome:

- Students can be efficient in economic modelling
- Able to analyse real life economic problems using mathematical tools
- Understanding the various constrained and unconstrained optimization techniques
- A second learning outcome will be the acquisition of some mathematical sophistication, in understanding and writing proofs
- These will be complemented by a basic learning outcome, which is to understand the main optimization and other tools used in a variety of economic applications

Textbook

- ✓ Alpha C. Chiang, Kevin Wainwright (2005): Fundamental Methods of Mathematical Economics, 4th Edition, McGraw-Hill.

References

- ✓ Abbott, S. (1997): Understanding Analysis, Springer.
- ✓ Apostol, T. (1991): Calculus, Volumes 1 and 2, Wiley.
- ✓ Simmons, G. and Krantz, S. (2006): Differential Equations, McGraw Hill.
- ✓ Strang, G. (2006): Linear Algebra and its Applications, Thomson Brooks/Cole.
- ✓ Sundaram, R. (1996): A First Course in Optimization Theory, Cambridge University Press.
- ✓ E-Pathasala: <https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=1>

Paper 1.4 Statistical Methods for Economics OES6007 (Credit 4)

OBJECTIVES:

The objective of this paper is to familiarize students with statistical theory and its application, and introduce some of the statistical tools that are extensively used in empirical work in economics. At the end of the course, students should be familiar with the analysis and interpretation of data, along with hands on training in statistical analysis.

CONTENT:

Unit I: Probability and Distribution

Concept of probability, conditional probability and Bayes' theorem; Random variables –discrete and continuous, Density and distribution functions, joint, marginal and conditional distribution, moment generating function, law of large numbers and Central Limit theorem, Discrete versus continuous distribution, Binomial, Poisson, Normal Distributions.

Unit II: Techniques of Sampling

Simple random sampling – with and without replacement, stratified random sampling, probability and non-probability sampling, statistic and sample moments.

Unit III: Sampling Distributions

Student's-t, Chi-square and F-distribution, determinants of sample size, law of large numbers and Central Limit theorem.

Unit IV: Estimation Methods

Point estimation of population mean for large sample and small sample, estimation of population proportion and population variance, Maximum likelihood and method of moment estimation, properties of good estimators – unbiasedness, consistency, efficiency, sufficiency, interval estimation.

Unit V: Testing of Hypothesis

Statistical hypothesis, simple versus composite hypothesis, critical region, types and size of error – type-I and type-II error, power of a test, p-value, Hypothesis test about – a population mean, population proportions, difference between two population means, difference between two proportions, a population variance, the ratio of two population variances, Tests of goodness of fit, the analysis of contingency tables (Chi-square test for testing independence of two-classification criteria), test for correlation.

Course Outcome: After completion of this paper student will be able to:

- Have a good knowledge in applied statistics which will help them to learn econometrics in coming semester
- Have a good hand on probability theory
- Handle data using excel for hypothesis testing and estimations
- Gain knowledge about different distributions
- Use statistical tools to estimate population parameters using samples

Textbooks

- ✓ S. P. Gupta (2019): Statistical Methods, S Chand.

References

- ✓ DeGroot, M.H. and M.J. Schervish, Probability and Statistics.
- ✓ S. C. Gupta and V. K. Kapoor (2002). Fundamentals of Mathematical Statistics, Sultan Chand and Sons Publishers.
- ✓ Hogg, R. and A. Craig, J., Introduction to Mathematical Statistics, McGraw-Hill, 1965.
- ✓ Miller, I. and M. Miller, Mathematical Statistics, sixth edition, Prentice Hall International, 1999.
- ✓ Mood, A. M., R. A. Graybill and R.C. Boes, Introduction to the Theory of Statistics, McGraw-Hill, 1974.
- ✓ Ramachandran, K. M and C. P. Tsokos, Mathematical Statistics with Applications, 2009.
 - ✓ E-Pathasala: <https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=>

Paper 1.5

Computer Application for Economic Analysis

OES6081 (Credit 4)

OBJECTIVES:

The direction towards the knowledge society shall be resting on a healthy economics and proper use of Information Technology. Economics being an empirical science, computers have emerged as the pivotal instruments of economic analysis, research, and forecasting. Therefore, the future economists must be equipped with skills and tools based on computers, which this course shall provide to them. This will not only enhance their employability but also prepare them for the challenges of the future.

CONTENT:

UNIT I: Introduction to Computers and Peripherals

Basic components of computer – CPU, input-output devices, keyboard, mouse and scanner, video display printers and plotters, data storage and retrieval, hard disk, floppy disk and CD ROM; Types of computers and their applications; Computer networking and resource sharing, hardware, software and firmware, examples and techniques in programming languages like C, C++, Visual Basic and Java.

Unit II: Data Processing, Techniques and Algorithms

Concept of data, record and file; Types of data and data structures, data analysis; File handling and operations like opening, appending and cascading, closing and attribute control; Data storage and retrieval; Data operations; Algorithms like sorting, merging, joining and bifurcation; Database concepts and operations on database; DBMS and RDBMS.

Unit III: Statistical Processing Techniques and Methods

Series, groups, tables, graphs and objects; Time and frequency series, regression methods and techniques; Regression analysis; Data validation; Trends and cyclicity forecasting; System modelling and description; System equation; Specification Error and correction strategies, Statistical modelling and descriptive statistics; Distribution functions, Regression statistics.

Unit IV: Practicalities in Using STATA and E-Views & Structure of Economic Data

About STATA: Creating a file and importing data; Entering variable names; Description of STATA tool; Basic commands in STATA. About E-Views: Creating a workfile and importing data; Commands, operators

and functions. Cross-sectional data; Time series data; Panel data.

Unit V: Working with Data: Basic Data Handling

Looking at raw data; Graphical analysis – Graphs in STATA, Graphs in E-Views; Summary statistics in STATA, Summary statistics in E-Views; Components of a time series; Indices and base dates; Splicing two indices and changing the base date of an index; Data transformations; Changing the frequency of time series data; Nominal versus real data; Logs; Differencing; Growth rates.

Course Outcome: After completion of this paper students will be able to:

- Know the basics of information technology
- Present and analyse the importance of information technology for data analysis
- Operate STATA for economic analysis
- Operate E-Views for time series analysis
- Visualize data using the above mentioned software

Textbook

- ✓ Computer Applications in Business- S Sudalaimuthu and S. Anthony Raj – Himalaya Publishing House.

References

- ✓ Information Technology for Management: Advancing Sustainable, Profitable Business Growth - Turban, Volonino, Wood, O.P. Wali – Wiley Publication.
- ✓ Stata User's Manual.
- ✓ Eviews User's Manual.

Paper 1.6
Indian Economy
OES6009 (Credit 4)

OBJECTIVES:

The objective of the course is to overviews major trends in economic indicators and policy debates in India in the post –Independence period, with particular emphasis on paradigm shifts given the rapid changes taking place in the country. The paper also highlights current economic issues and major policy debates in India.

CONTENT:

Unit-I: The Overview of India's Economic Policy since Independence

Broad Outline of Economic Policy in India since Independence. Rapid industrialization – Mixed economy set up – Achievements and deficiencies of overall economic policies during the Pre-reform Period in India – Economic Reforms since early 1990s: Liberalization, Privatization and Globalization.

Unit II: Overall Economic Performance

India's Growth Story– Stagnation, Crisis and takeoff: transition from Hindu growth rate to rapid economic growth of post-reform period – issues and debates – A Story of Sustained savings and Investment – Relating changes in policy paradigm and economic performance – Unfinished agenda – Poverty and Economic Inequality.

Unit III: Understanding Indian Macro economy

Plan Strategy, Development Experience and Payments Crisis: Some Disquieting Features – Conventional Hypothesis on the Roots of the Crisis – Macro(mis)management – Some Dissenting Notes – Theory and Evidence – Alternative View on Macroeconomic Linkages and the Crisis – Macroeconomics of India's Reforms Experience – Balance Sheet of the Indian Economy – Economic Interpretation of Developments in the Post-reform Period – India's Macroeconomic Puzzles – Projections and Reflections on future economic growth prospects.

Unit IV: Sectoral Issues – Post-reform Period

Agricultural sector: Economic liberalization and Indian agriculture – Current challenges for Indian agriculture: Growth crisis, its severity and options – 'Contract farming' and its implications for Indian agriculture and agro-processing industries – Industrial Sector: Industrial productivity, investment, FDI and growth – Manufacturing – Large corporates and MSMEs - labour reforms - Services sector: Indian experience of Services-led growth – Services growth-Output, Employment and Exports – Understanding 'Services Revolution' in India - Some Causal links – Sustainability and Optimality.

Unit V: Current Economic Issues in India

Current macroeconomic performance: Current economic deceleration – Supply side and demand side explanations – Government's initiatives: Make in India, GST, Demonetisation, Deregulation of petroleum prices – Current issues as highlighted in latest Economic Survey, Union Budget, monetary policy – other contemporary issues on Indian economy having important ramifications.

Course Outcome: After completion of this paper student will be able to:

- Have an insight into the economic history of the post-independent India
- Understand the relevance and impact of economic reforms in India
- Gain awareness about different economic as well as social challenges in India such as poverty, inequality, population pressure, regional imbalance, and issues related to human capital development
- Gain thorough knowledge about the planning process in India
- Get introduced to the different data set related to the Indian economy through the practical sessions

Textbook

- ✓ R. Datta and K.P.M. Sundaram (2004): Indian Economy, S. Chand, New Delhi.

References

- ✓ Uma Kapila (ed) (2018) Indian Economy since Independence: A comprehensive and critical analysis of India's economy, 1947-2017, Academic Foundation, New Delhi.
- ✓ Frankel, Francie R. (2005): India's Political Economy 1947-2004, OUP.
- ✓ Subramanian, Arvind (2008): India's Turn: Understanding the Economic Transformation, OUP.
- ✓ Government of India: Economic Survey, Recent issues.
- ✓ Reserve Bank of India: Annual Report, Recent issues
- ✓ Relevant research articles on various aspects of the Indian economy published in leading professional journals in economics.

Semester II

Paper 2.1 Microeconomics II OES6002 (Credit 4)

OBJECTIVES:

The Microeconomics II course is designed to provide students with advanced topics in microeconomics such as general equilibrium, welfare economics, asymmetric information, market failure and game theory. The research oriented teaching of this course will enable the students to undertake research in microeconomics.

CONTENT:

Unit I: General Equilibrium

Absolute versus relative prices, perfectly competitive price and general equilibrium models – with and without production, uniqueness and determinacy, Edgeworth box, Pareto improvement and efficiency, Walrasian equilibrium.

Unit II: Welfare Economics

Arrow-Debreu economy, welfare theorems, existence of Walrasian equilibrium, fixed-point theorem, core and core convergence, general equilibrium with time and uncertainty, Jensen's Inequality, social welfare function, transfer efficiency; Kaldor-Hicks-Samuelson criterion, Rawls's theory of social justice.

Unit III: Market Failure and Public Goods

Reasons for market failure – market imperfections, public goods, externality, macro-economic factors; types of public goods, theory of public goods – provision and pricing, government intervention, second-best solution, free riding, types of externalities – production and consumption externalities, Pigovian and Coasian solutions.

Unit IV: Asymmetric Information

Moral hazard problem, adverse selection, principal agent problem, theory of lemons, credit market implications of asymmetric information, market signaling.

Unit V: Game Theory

Sequential and simultaneous games, extensive forms and normal forms, dominant strategies and elimination of dominated strategies, Nash equilibrium, Dynamic games, backward induction, subgame perfect equilibrium, applications with oligopoly markets: Cournot, Bertrand, Stackelberg and cartel.

Course Outcome: After completion of this paper student will be able to:

- Understand Microeconomics from a general equilibrium perspective
- Have an insight into the new developments in the Microeconomics
- Develop an idea about different welfare economics theories
- Identify the practical relevance of market failure, asymmetric information, and game theory

Textbook

- ✓ H L Ahuja, Advanced Economic Theory, S Chand.

References

- ✓ Varian, H.: Microeconomic Analysis, W.W. Norton, 3rd Edition, 1992.
- ✓ Henderson, M. and R.E. Quandt, Microeconomic Theory: Mathematical Approach, McGraw Hill 3rd edition.
- ✓ Gravelle, H and R. Rees: Microeconomics, Pearson Education, 3rd Edition, 2004.
- ✓ Mas-Colell, A. , M. Whinston and J Green: Microeconomic Theory, Oxford University Press, 1995.
- ✓ Gibbons(1992): Game Theory for Applied Economists, Princeton University Press.
- ✓ Mukherji, A.: Walrasian and Non-Walrasian Equilibria: An Introduction to General Equilibrium Analysis, Claredon Press, Oxford, 1990.
- ✓ Recent research papers in Microeconomics will be discussed.

Paper 2.2 Macroeconomics II OES6004 (Credit 4)

OBJECTIVES:

This course has been designed to provide understanding of the new development (post Keynesian) in the macroeconomics. All the theories discussed in this course can be tested empirically using the data from Penn World Table and World Development Indicator in assignments and projects.

CONTENT:

Unit I: Labour Market

Profit Maximization and Labour Demand– Utility maximization and Labour Supply– Aggregate Supply with/without Money Illusion– Neoclassical Labour Market Equilibrium–Introducing Unemployment Principles of Effective Demand- The Keynesian Underemployment Equilibrium.

Unit II: Inflation and Unemployment

The Phillip's Relationship– Theoretical Underpinnings of Phillip's Curve– Natural Rate Hypothesis– Theory of Adaptive Expectation– Expectation Augmented Phillip's Curve– The Rational Expectation and Lucas Supply function– Policy Ineffective Theorem– The Lucas Critique – Rational Expectation and Implications for Monetary Policy.

Unit III: Theories of Business Cycles

Multiplier-Accelerator Interaction Model – Monetarists Interpretation of Business Cycles–Real Business Cycle Theory.

Unit IV: Post Keynesian Macroeconomics

Micro Theoretic foundations for Wage and Price Rigidity – Small Menu Cost – Efficient Wage Theory Staggered Wage Setting – Insider-Outsider Model.

Unit V: Recent Advancements in Macroeconomic Policies

The Debate over Rules vs. Discretion – Taylor’s Rule and Monetary Policy – Inflation Targeting – Issues Relating to Inflation Targeting – Country Experiences with Inflation Targeting.

Course Outcome: After completion of this paper student will be able to:

- Understand recent development in Macroeconomics theory which not covered by typical PG level macroeconomics course in India
- Differentiate between different schools of thoughts in the macroeconomics
- Have an insight into the Real Business Cycle and Inflation targeting using the real world data

Textbook

- ✓ Ahuja, H. L, Macroeconomics Theory and Policy, S Chand, 2019.

References

- ✓ Mankiw, N. Gregory. *Macroeconomics*. Vol. 41. New York: Worth Publishers, 2003.
- ✓ Rosalind Levacic and Alexander Rebmann (1982), *Macroeconomics: An Introduction to Keynesian – Neoclassical Controversies*, Macmillan.
- ✓ Errol D’Souza (2008), *Macroeconomics*, Pearson.

Paper 2.3 Public Economics OES6006 (Credit 4)

OBJECTIVES:

This course is designed to enhance the knowledge of the students about the economics of government expenditure and taxation in Indian context. The course discuss various public policy measures undertaken by the Indian Government. It also analyzes the policy applications including welfare assistance, education healthcare spending, and tax policies such as income taxes and consumption taxes.

CONTENT:

Unit I: Role of Government and Importance of Public Finance

Nature and scope of Public Finance – Rationale for Government intervention- Musgrave’s three functions of Government- Types of government intervention- Public Revenue- sources of public revenue.

Unit II: Public Goods and Public Expenditure

Pure Public good, efficient output of a pure public good The Theory of Public Expenditure- Wagner’s Law Peacock-Wiseman hypothesis- Samuelson theory.

Unit III: Taxation and Public Debt

Theories of Taxation – ability and benefit principles of taxation (Lindhal)-Tax Neutrality, Direct versus Indirect Taxes and Equity, Canon of Taxation- incidence and effect of Taxation- The impact of taxes on Market prices and Efficiency. Theory of measurement of dead weight losses- the problem of double taxation Views of Public Debt; Burden of Public Debt; Public debt management and implication on growth.

Unit IV: Fiscal Policies

Program Budgeting – It's Application, Zero-Based Budgeting, and Budgeting Policies; Budgetary deficits and its implications; Fiscal Responsibility and Budget Management Act (FRBMA); Theory of Fiscal Policy; Fiscal Policy with Special Reference to Under-developed Countries.

Unit V: Fiscal Federalism

Fiscal Federalism – Theory and Problems of Centre State Financial Relations in India, Criteria for Resource Transfer from Centre to State, Finance Commission and Devolution of Resources to State Recommendations of Raja J. Chelliah Committee and Kelkar Committee; Recent Tax Reforms in India: Direct Tax and Goods and Service Tax (GST); Union Budget, State Finance of Odisha - Trend and composition of Revenue and Expenditure.

Course Outcome: After completion of this paper student will be able to:

- Understand the different concepts associated with public finance
- Understand the budget
- Have an insight into the different policies introduced to reduce fiscal deficit in India as well as in state

Textbook

✓ Musgrave, R.A. and P.B. Musgrave (1976), Public Finance in Theory and Practice, McGraw Hill Kogakusha, Tokyo.

References

- ✓ Atkinson, A.B. and J.E. Stiglitz (1980), Lectures on Public Economics, TMH, New York.
- ✓ Jha. R. (1998), Modern Public Economics, Routledge, London.
- ✓ Stiglitz, J.E (2000), Economics of the Public Sector.
- ✓ GoI, Report of Finance Commission, various issues.

Paper 2.4
Industrial Economics
OES6008 (Credit 4)

OBJECTIVES:

The industrial economics course provides an in-depth discussion of key industrial economics concepts ranging from the foundations of market structure to theories of strategic interaction. Central theoretical concepts of modern industrial economics will be discussed and applied. The course is developed in the context of the industrial development in India.

CONTENT:

Unit I: Industries and Development

Basic concepts of industrial economics- rational of industrialization, evolution of industries in India, need importance and role of industries in economic development, industry and agriculture sector linkage industrial development-experience of developed and developing countries.

Unit II: Industrial Entrepreneurs

Concepts and definition of industrial entrepreneurs, entrepreneurial motivation, types , characteristics and functions of industrial entrepreneurs, role of entrepreneurs in economic development, role of women entrepreneurs in the industrial development, rural entrepreneurship development in India, institutional finance to entrepreneurs development, problems and remedies of industrial entrepreneurs.

Unit III: Location and Dispersion

The general determinants of industrial location- technical factors, economic and infrastructural factors, other factors, theories of industrial location-the central place theory, Renner's theory, Rawstron's principle Weber's theory, the market area theory of TordPalander, Central place theory of Losch, trend of industrial location in India.

Unit IV: Industrial Finance

Importance of finance to industrial development, Owned, and external funds for industrial development; Role and types of institutional finance – functions of IFCI, IDBI, SIDBI, MSFC ,ICICI, SFCs, SIDC, commercial banks, etc., in industrial development, trend and problems of industrial finance in India.

Unit V: Industrial Development and Problems

Recent trends in industrial growth in India- growth of major industries – Cotton textiles, Iron and Steel; Jute Sugar; Coal; Cement and engineering goods; Development and problems of small-scale industries in India; Role of public and private sectors in India. Effects of liberalization on industrial development in India, role of MNCs in industrial development, Sick industries and remedies, Industrial policy of India.

Course Outcome: After completion of this paper student will be able to:

- Capture knowledge about role of industries and their performances. Particularly the productivity and efficiencies of the industries. The role of entrepreneur work to become the industry successful
- Understand different industrial theories in Indian perspective
- Have an insight into the various policies adopted by government of India for the industrial development of the country
- Understand the growth pattern of the major industries in India

Textbook

- ✓ Barthwal, R.R. (1992), Industrial Economics: An Introductory Text Book, Wiley Eastern Ltd. New Delhi.

References

- ✓ Ahluwalia, I.J. (1985), Industrial Growth in India, Oxford University Press, New Delhi.
- ✓ Brahmananda, P.R. and V.R. Panchamukhi (Eds) (1987), The Development Process of the Indian Economy, Himalaya Publications.
- ✓ Reserve Bank of India, Report on Currency and Finance (Annual). And Government of India, Economic Survey (Annual).

Paper 2.5 Basic Econometrics OES6012 (Credit 4)

OBJECTIVES:

The Basic Econometrics course is designed to provide students some useful tools for their future research. This course will help the student to develop a way of thinking in quantitative terms. It will also help them to empirically test the theories learned in microeconomics and macroeconomics using software such as STATA, R, and E-views.

CONTENT:

Unit I: Basic Regression Analysis

Nature and Scope of Econometrics – Simple Regression Model: Specification, OLS Method, Assumptions of CLRM and Gauss Markov Theorem, Hypothesis Testing and Goodness of Fit – Extensions of Simple Regression Model: Regression through Origin, Scaling and Units of Measurement, Functional Forms of Regression Model – Maximum Likelihood Estimation.

Unit II: Multiple Regression Models

Model Specification – A model with 2-explanatory variables, Interpretation Multiple Regression Equation Testing Hypothesis: Individual Partial Regression Coefficient and Overall Significance, Goodness of Fit – F tests, R² and Adjusted R² – Multiple Regression Model with N-explanatory variables and Matrix Approach.

Unit III: Relaxing Select CLRM Assumptions

Multicollinearity, Heteroscedasticity, and Autocorrelation – Nature, Consequences, Detection and Remedial Measures. General Criteria for Model Selection, Types of Specification Errors and Testing Model Specification, Errors of Measurement.

Unit IV: Dummy Variable Models

Qualitative Independent Variable Models – Qualitative Variables with Two Categories and Many Categories – More than one qualitative explanatory variables – Uses of Models with qualitative explanatory variables: Estimating Seasonal Effects, Testing for Structural Change, Piece-wise Linear Regression - Qualitative Dependent Variable Models: Binary Choice Models - LPM, Probit Model, Logit Model – Limited Dependent Variable: Tobit Model.

Unit V: Simultaneous Equations Model

Simultaneous equations models (SEM): Specification and Rationale – Endogeneity in Regression Model and its implications for OLS estimators – Problem of Identification in SEMs: Order and Rank Conditions Estimation of SEM: ILS, 2SLS and 3 SLS.

Course Outcome: After completion of this paper student will be able to:

- Have a basic idea about the use of econometrics
- Do regression analysis using the software such as R, STATA, and E-views
- Get a thorough hands on training on the different estimation methods such as Simultaneous Equations Model and Dummy variable models

Textbook

- ✓ Gujarati, D (1998): *Basic Econometrics*, 4th Edition, New York: McGraw Hill.

References

- ✓ Wooldridge, J (2011): *Introductory Econometrics a Modern Approach*, 5th Edition, Cengage learning
- ✓ K Pindyck, Robert S. and Daniel L. Rubinfeld (1995): *Econometric Models and Economic Forecast*, 4th Edition, Irwin McGraw-Hill, New York.
- ✓ Johnston, J (1995): *Econometric Methods*, 3rd edition, New York: McGraw Hill.

Paper 2.6 **Research Methodology** **OES6014 (Credit 4)**

OBJECTIVES:

This course aims to guide the students towards achieving competence and proficiency in the theory of and practice to research. This fundamental objective can be realized through helping these students to develop the subject of their research, encourage the formation of higher level of trained intellectual ability, critical analysis, rigour, and independence of thought, foster individual judgement, and skill in the application of research theory and methods, and develop skills required in writing research proposals, reports, and dissertation.

CONTENT:

Unit I: Foundations of Research

Meaning, Objectives, Motivation, and Characteristics of Research, Criteria of good Research, Types of

Research. Research Problem, Sources of Problem, Defining a Problem, Statement of a Problem Literature Review: Meaning, need, Objectives, Sources of literature, how to conduct literature review? How to report literature review?

Unit II: Research Hypothesis

Research hypothesis formation: Meaning, nature, functions and types of hypothesis, characteristics of a good hypothesis, variables in a hypothesis, formulating a hypothesis, testing of hypothesis.

Unit III: Research Approach

The philosophical background, the qualitative approach, the quantitative approach, the Mixed-Methods Approach, Criteria for selecting a Research Approach.

Unit IV: Research Strategies

Types of research strategies, which strategy to choose, case studies, experiments, ethnography, Phenomenology, Ground Theory, Action Research, mixed methods, longitudinal methods.

Unit V: Data Collection Methods

Questionnaires, Interviews, Focus Groups, Observation, Meaning and Definition of Sampling, Functions of population and Sampling, Methods of sampling, characteristics of a good sample, size of a sample.

Course Outcome: After completion of this paper student will be able to:

- Understand the relevance of research and will have a clear idea about how to do it
- Construct appropriate hypothesis for the research
- Use different research tools learnt from this course in their Master's dissertation

Textbook

✓ Kothari, C. R., and Garg, G. (2019): Research Methodology: Methods and Techniques. New Age International Publishers.

References

✓ Khasnabis, R. (2019): Research Methodology. Orient Blackswan Private Limited, New Delhi.

Semester III

Paper 3.1 International Economics OES7001 (Credit 4)

OBJECTIVES:

This course provides an understanding of the intellectual and practical problems that arise from the economic interaction between countries. It also offers explanations of the international pattern of trade and specialization and of the reasons why similar economies often trade more with each other than with dissimilar ones. It will also discuss various policy options available for the different types of open economies.

CONTENT:

Unit I: Theories of International Trade

The basis of international trade, Mercantilism, The pure theory of international trade; Adam Smith and the Theory of Absolute Advantage, the Ricardian model of comparative advantage; the Heckscher-Ohlin mode of international trade; empirical evidence of H-O model; factor price equalization theory; Leontief paradox; theory of immiserizing growth; imitation gap and product cycle theory.

Unit II: The theory of Customs union

Customs union; concept and definition; trade creating and diverting customs union; partial equilibrium analysis of customs union; pre-customs union equilibrium, post-customs customs union equilibrium; general effects of customs union; net welfare effect of customs union; further consideration; general equilibrium analysis of a customs union; The Lipsey mode; The Venek model; empirical findings and dynamic consideration.

Unit III: Policies in Open-Economy

Instruments of trade policy; The Political Economy of Trade Policy; Trade problems of the developing nations; Trade Policy in Developing Countries; Controversies in Trade Policy; Trade barriers-tariff and non-tariff trade barriers; effects of tariff and non-tariff barriers; unfair trading practices: dumping and subsidies; some dynamic aspects of trade policy.

Unit IV: Balance of Payments

Concept and definition of balance of payments (BoP); Balance of trade and balance of payments: overall balance of payments; equilibrium and disequilibrium in the balance of payments; balance of payments adjustment mechanism- automatic BoP adjustment; expenditure switching policy; expenditure changing policy; other methods of BoP adjustment mechanism; recent trend of balance of payments in developing countries-with special reference to India – theories of foreign exchange rate determination

Unit V: Indian perspective of International trade

Trend of international trade of India, direction and composition of India's international trade, trade deficit scenario of India, new economic policy and Indian trade, recent trade policies, problem of Indian trade, suitable solutions, state of India's export in the international market, Goods and

Services tax and its impact on India's trade. International institutions: GATT, WTO, SAARC, ASIAN, ADB and other international and regional organisations.

Course Outcome: After completion of this paper student will be able to:

- Understand different concepts associated with open economy macroeconomics
- Identify various suitable policies in the context of globalization
- Have an insight into the advantages and disadvantages of the various trade practices in the Indian context

Textbook

- ✓ Krugman. P.R, and Obstfeld (2006): *International Economics*, Addison Wesley, USA.

References

- ✓ Dominic Salvatore, (2016), *International Economics*, Wiley.
- ✓ Carbaugh R. J (2014), *International Economics*, 12th Edition, South-Western, USA.
- ✓ Cherunilam F. (2016) *International Economics*, The McGraw-Hill, New Delhi.
- ✓ GOI, Annual Reports, Ministry of Commerce and Industries, Various issues.

Paper 3.2 **Economic Growth and Development** **OES7003 (Credit 4)**

OBJECTIVES:

The goal of this course is to provide students with the essential tools and concepts of development economics to prepare them to understand what makes underdevelopment persist and what helps development succeed. It also discusses various theories associated with economic growth and checks how the developed countries achieved better standard of living. This course will enable students with cutting edge research topics in the field.

CONTENT:

Unit I: Introduction

Economic growth and development: conceptual issues and indicators, Classical theories of economic growth Ideas of Adam Smith and David Ricardo – Harrod-Domar Model.

Unit II: Neo-classical Theories of Growth

Preferences, Technology, and Demographics, Optimal growth, Steady-state equilibrium, Transition dynamics and uniqueness of equilibrium, Neoclassical growth in discrete time, Technological change and Canonical neoclassical model, Role of policy, Growth with overlapping generations – baseline and canonical models.

Unit III: Endogenous Growth Theories

First-generation models of endogenous growth: AK Model with physical and human capital, Two-sector A

model, growth with externalities, Endogenous Technological Change: Modelling technological change, Dixit Stiglitz model and aggregate demand externalities, Lab-equipment model of growth with input varieties, growth with knowledge spillovers, growth with expanding product varieties, Models of Schumpeterian growth, Directed technological change.

Unit IV: Economic Development and Economic Growth

Broad overview of theories of development – Structural Change and Economic Growth: Non-balanced growth-demand side, Non-balanced growth-supply side, Structural transformation, Agricultural productivity and industrialization.

Unit V: Political Economy of Growth

Institutions, Political Economy and Growth: Impact of Institutions on Long-run development, Distribution conflict and economic growth in a simple society, Canonical Cobb-Douglas model of distributional conflict, Distributional conflict and competition, Inefficient economic institutions: A First Pass. Political Institutions and Economic Growth: Political regimes and economic growth, Political institutions and growth-enhancing policies, dynamic trade-offs, Understanding endogenous political change.

Course Outcome: After completion of this paper student will be able to:

- Understand the relevance of learning economic growth using different growth models
- Have an insight into the various development theories
- Understand the new developments in modern growth as well as development theories

Textbook

- ✓ Ray, D. (1998). Development Economics. Princeton University Press.

References

- ✓ AP Thirlwall (2011) Economics of Development: Theory and Evidence, Oxford University Press.
- ✓ Barro, Robert J. and Xavier Sala-i-Martin (2004): *Economic Growth*, Prentice-Hall of India Pvt. Ltd New Delhi.
- ✓ Gerald Meir, (2003), *Leading Issues in Economic Development*, Oxford University Press.
- ✓ Sen, Amartya (1970): *Growth Economics*, Penguin Harmondsworth.

Paper 3.3
Summer Internship Program
OES7081 (Credit 2)

Specialization I: Financial Economics I

Paper 3.4.1 Financial Economics OES7101 (Credit 4)

OBJECTIVES:

This course is designed to provide the principles of financial economics, and a bridge to higher level courses in economics and finance in fourth semester. It enables students to develop critical discussion of the various topics associated with both finance and economics. This course provides a broad idea about the operation of the financial markets in an economy.

CONTENT:

Unit I: Introduction to Financial Markets

Capital markets, consumption and investments with and without capital markets, market places and transaction costs and the breakdown of separation; Fisher separation theorem; the agency problem; maximization of shareholder's wealth, capital budgeting techniques.

Unit II: Choice under Uncertainty

Axioms of choice under uncertainty; utility functions; expected utility theorem; certainty equivalence measures of risk-absolute and relative risk aversions; stochastic dominance-first order, second order and third order; measures of investment risk-variance of return, semi-variance of return, shortfall probabilities.

Unit III: Mean-Variance Portfolio Theory

Measuring portfolio return and risks, effect of diversification, minimum variance portfolio, perfect correlated assets, minimum variance opportunity set, static portfolio choice; mean variance frontier of risk and risk-free asset.

Unit IV: Introduction to Asset Pricing

Capital asset pricing model; empirical methods to test models of asset pricing; Factor models and cross section of stock returns; arbitrage pricing theory and models.

Unit V: Efficient Market Hypothesis

Defining capital market efficiency, relationship between the value of information and efficient capital market rational expectations and market efficiency, market efficiency with costly information, efficient capital market theory and empirical models.

Course Outcome: After completion of this paper student will be able to:

- Have a broad idea about the operation of the financial markets in an economy
- Develop an insight into the relevance of financial market
- Measure portfolio return and risk
- Have a detailed idea about the important theories associated with financial economics such as efficient market hypothesis

Textbook

- ✓ Copeland, T. E. and J. F. Weston, Financial Theory and Corporate Policy, Addison Wesley, 1992.

References

- ✓ Elton, E.J and M.J. Gruber, Modern Portfolio Theory & Investment Analysis, (fourth edition) John Wiley & Sons 1991.
- ✓ Houthakker, H.S. and P.J. Williamson, Economics of Financial Markets, Oxford University Press 1996.
- ✓ John Y. Campbell and Luis M. Viceira, Strategic Asset Allocation: Portfolio Choice for Long-Term Investors, Oxford University Press, 2002.
- ✓ Christian Gollier, The Economics of Risk and Time, MIT Press, 2001.
- ✓ NSE Securities Market Annual.

Paper 3.4.2 International Finance OES7103 (Credit 4)

OBJECTIVES:

The objective of the course is to provide an understanding of both the key features of foreign exchange markets and the actual problems of financial decision making within an environment of free flows of foreign capital and floating exchange rates. The course focuses on the nature of foreign exchange exposure and risk and its management through arbitrage, speculation, hedging, the types of foreign exchange operations such as spot, forward, foreign exchange swaps, currency swaps, futures and options.

CONTENT:

Unit I: International Finance Introduction and Overview

International Financial Markets – Increasing Interdependence in the Global Economy – Trends in International Trade and Cross Border Financial Flows – Impact on Risk Management – Objectives and Decision Making at the Firm in Global Context – Overview of International Monetary Systems and Recent Developments International Markets – International Monetary System – Balance of Payments – IMF Standards for BC Compilation – Accounting and Reporting-Euromarkets.

Unit II: Nature, Exposure and Measurement of Risk in the Foreign Exchange Market

Foreign exchange spot and forward contracts – Exchange Rate Foreign exchange swaps- Speculation and Arbitrage in foreign exchange trading-Relationship between Spot and forward contracts Decision making by private firms under exchange rate and Interest Rate Volatility-Accounting treatment of risk exposure-conduct of business under pegged and floating rates.

Unit III: Currency and Interest Rate Derivatives

Forward Contract Vs. Future Contract – Institutional Arrangements for Trading Futures – Cash Settlement and Marking to Market – Future Pay-Offs as a Function of the Price of Underlying Asset – Use of Future Contracts to Hedge a Risky Position – Pricing of Futures – Risk Premium – Relation Between Futures Price and Future Spot Price – Market Volatility – Currency and Interest Rate Options – Basic Concepts Institutional Arrangements for Trading Options – Put and Call Options at Prices at Maturity and at Prices

Prior to Maturity – The Put-Call – Forward Parity Formula – Replicating Portfolio Concept Used for Constructing an Option – Price an Option and Hedge an Option Position –Volatility – Concept of Delta Hedging for Option Portfolio Pricing Currency and Interest Rate Swaps – Origin and Growth of the Currency Swap – Market-Cash Flow Obligations in Currency and Interest Rate Swap Markets – Transforming Cash Flows from Floating Rate Terms to Fixed Rate Terms and From Foreign Currency Terms to Domestic Currency Terms – Price Risks- Management of Price Risks –Simulation Approach.

Unit IV: Theories of Exchange Rate

Parity Conditions and the Interrelationships Among Exchange Rates – Interest Rates and Other Capital Market Variables – Use of Purchasing Power Parity (PPP) and Calculation of PPP Exchange Rates – Connection Between Real Exchange Rates and PPP– Use of PPP by Private and Public Policy Makers for Strategic Decision Making– Interest Rate parity– Fisher Open Condition – The Relationship Between Interest Rates– Spot Rate and Forward Rate- Deviations from Interest Rate Parity and Arbitrage Transactions – Spot Exchange Rate Determination – Monetary Approach to Exchange Rates – Effects of Changes in Exchange Rates – Elasticity Approach – Absorption Approach – Portfolio Balance Approach – Impact of Changes in Money Supply – Real Income – Short Term Interest Rate – Inflation Rates on Spot Exchange Rate – Impact of Macroeconomic Variables on Spot Exchange Rate.

Unit V: Foreign Exchange Market Efficiency

Definition of Foreign Exchange Market Efficiency– Technical Trading Models for Measuring Spot Market Efficiency– Empirical Evidence on Spot Market Efficiency– Technical Models and Empirical Evidence on Forward Market Efficiency.

Course Outcome: After completion of this paper student will be able to:

- Have an insight into the international monetary system and the balance of payment
- Learn how the foreign exchange market operates
- Understand the impact of different exchange rate regimes on the domestic economy of developing and under developed countries

Textbook

- ✓ Levi, Maurice D. (2009), International Finance, 5th Ed., Routledge.

References

- ✓ Shapiro, Alan C. (2006) Multinational Financial Management, 8/e, Wiley & Sons. ISBN 0471737690.
- ✓ Eiteman, D. K., Stonehill, A. I., Moffett, M. H. (1999) Multinational Business Finance, 8th Ed., Addison Wesley.
- ✓ Levi, Maurice D. (2009), International Finance, 5th Ed., Routledge.
- ✓ Levich, Richard M. (2001), International Financial Markets Prices and Policies, 2nd Ed., McGraw-Hill Irwin.

Paper 3.4.3
Financial Econometrics
OES7105 (Credit 4)

OBJECTIVES:

The course intends to familiarize students with the principal techniques in Financial Econometrics. The basic econometric techniques for finance like regression analysis, time series analysis, Co integration & error correction methods are covered. It should provide an understanding of the use of these techniques in financial economics.

CONTENT:

Unit I: Scope and Methods

The Data Generating Process – Financial Econometrics at Work – Time Horizon of Models – The Behavior of Financial Variables – Distributions of Returns – Multivariate Returns – Empirical Properties of Returns.

Unit II: Testing for Trends and Unit Roots

Unit Root Processes, Testing for Unit Roots- Dickey Fuller Test, Augmented Dickey Fuller Test, Phillip Perron Test, KPSS Test, Structural Change, Problems in Testing for Unit Roots.

Unit III: Modeling Univariate Time Series

Stationarity – Correlation and Autocorrelation Function – Autoregressive Models – Properties of AR Models – Identifying AR Models in Practice – Goodness of Fit – Forecasting – Moving-Average Models – Properties of MA Models – Identifying MA Order – Estimation – Forecasting Using MA Models – ARMA Models – Properties of ARMA (1,1) Models – General ARMA Models – Identifying ARMA Models – Forecasting Using an ARMA Model.

Unit IV: Time-varying Volatility Models

Characteristics of Volatility, Stylized Facts, The ARCH Model- Properties and Weaknesses of ARCH Model The GARCH Model- Extensions to the basic GARCH model, Asymmetric GARCH models, Estimation of the GARCH Models, Stationary ARMA-GARCH Models, Lagrange Multiplier Test, Multivariate GARCH Formulations.

Unit V: Multivariate Time Series Analysis

Weak Stationarity and Cross-Correlation Matrices, Cross-Correlation Matrices, Vector Autoregressive Models- Reduced and Structural Forms, Estimation and Forecasting with VAR Models, Impulse responses and variance decompositions, Vector Moving-Average Models, Vector ARMA Models.

Course Outcome: After completion of this paper student will be able to:

- Understand the time series methods used to explain the relationship between financial variables
- Gain practical knowledge to handle EViews (and R) for econometric analysis through the practical sessions
- To test different issues associated with time-series econometrics

Textbook

- ✓ Gourieroux, Christian and Jasiak, Joann (2001), Financial Econometrics, Princeton University Press.

References

- ✓ Baltagi, B.H. (2008), Econometric Analysis of Panel Data, 4th Edition, Wiley
- ✓ Brooks, Christopher (2002), Introductory Econometrics for Finance, Cambridge University Press.
- ✓ Campbell, Lo and Mackinlay (1997), The Econometrics of Financial Markets, Princeton University Press
- ✓ Gujarati, Damodar and Porter, Dawn (2009), Essentials of Econometrics 4th Ed., McGrawHill/Irwin.
- ✓ Hamilton James (1994), Time Series Analysis, Princeton.
- ✓ Dougherty, Christopher (2007), Introduction to Econometrics, 3rd Ed., Oxford University Press.
- ✓ Studenmund, A. H. (2010), Using Econometrics: A Practical Guide, 6th Ed., Addison-Wesley.
- ✓ Tsay, Ruey S. (2002): Analysis of Financial Time Series, Wiley Series in Probability and Statistics.

Specialization I: Public Policy I

Paper 3.5.1

Law and Economics

OES7201 (Credit 4)

OBJECTIVES:

The objective of this course is to enable students to recognize the economic issues in a legal problem and apply the economic way of thinking to analyze it. The course helps students to understand the economic importance of the law associated with intellectual property. The course is designed for developing a research aptitude among the students in the field.

CONTENT:

Unit I: Overview of Law and Economics

Economic Analysis of Law: An Introduction, Why do economists need to be concerned about law? Relationship between law and economics. Economic Concepts and their relevance to Law. Legal Concepts The Common Law and the Civil Law Traditions, Introduction to Judicial System in India, Economic Approach to Legal Rules, Methodological Aspects of Legal Rules, Efficiency, Justice and the inherent rationality of Private Law, Development of efficient Rules: Selected Cases.

Unit II: Intellectual Property Rights (IPRs)

Intellectual Property Rights (IPRs) – Patents, Copyrights, Trademark, Trade secrets, Plant varieties Farmers' Rights – Relevance, relationship between technological development, technology diffusion, and economic growth.

Unit III: Contract Law Analysis

Introduction - Economic Theory of Contract - Perfect Contracts, Imperfect Contracts. Economics of Remedies for Breach of Contract - Expected Damages, Opportunity Cost, Reliance Damages, Restitution, Specific Performance. Differences between Contracts and Torts - The Foreseeability Rule in Contract Law, Pure Economic loss in Torts

Unit IV: Economic Approach to Environmental Protection Laws

Environmental protection laws and Court decisions, Principles and doctrines evolved by Supreme Court for protection of Environment, Air pollution, Water pollution, Sound pollution, Automobile and industrial pollution, Climate change, Carbon credits – emerging market

Unit V: Economic Analysis of Corporate Law Issues

Formation of a company, share capital and fund raising, Separation of ownership and control, Majority power and minority protection, Corporate governance, Regulation of security markets and protection of investors and SEBI, Management of foreign investment and foreign exchange under FEMA

Course Outcome: After completion of this paper student will be able to,

- Have an insight into the importance of law in economics
- Understand the new development in the international laws related to industrial production and pollution
- Gain deep knowledge about the role of Intellectual Property Rights in economic growth

Textbook:

- ✓ Polinsky Mitchell A, (2018). An Introduction to Law and Economics, Wolters Kluwer.

References

- ✓ Posner Richard A – Economic Analysis of Law (7th Edition 2007)
- ✓ Cooter Robert & Ulen Thomas- Law and Economics (5th Edition 2007)
- ✓ Shavel Steven – Foundation of Economic Analysis of Law (2004)
- ✓ Harison Jeffrey L. & Theeuwes Jules - Law and Economics (2008)
- ✓ Friedman David D. – Law's Order (2000)
- ✓ Wittman Donald A – Economic Analysis of Law- Selected Reading (2003)
- ✓ Micali Thomas J.- The Economic Approach to Law (2009)
- ✓ Hirsch Werner Z. - Law and Economics (1999)
- ✓ Landes Williams, Posner Richard - The Economic Structure of Intellectual Property Laws (2003).
- ✓ Mercuro Nicholas, Medema Steven G. – Economics & the Law- Second Edition (2006)
- ✓ Baird, Gentner & Picker – Game Theory & the Law (1994)

Paper 3.5.2
Agricultural Economics
OES7203 (Credit 4)

OBJECTIVES:

The objective of the Agricultural Economics course is to convey the significance of agriculture in economic development in the context of developing country. This course provides information to students about various modern technology and ideas adopted in the agriculture sector. It also uses various microeconomics and macroeconomics tools learned in the first and second semester.

CONTENT:**Unit I: Production Economics and Farm Management**

Production Process; Economic principles of Farm Management; Resource management and allocation; basic concepts-marginal returns, yield gap, returns to scale, economics of scale, technology and input use; law of comparative advantages

Unit II: Farm Resources and Optimization

Factor-product, product-product relations; Estimation of different forms of production functions using farm level data; Estimation of iso-quant and least cost combinations of crops; production in dynamic setting policy impact on production - cost concepts, cost of cultivation of principal crops

Unit III: Risk and Uncertainty in Agriculture

Decision theory and elements of risk and uncertainty in agriculture; measurement of risk, adjustment to risk types of risk - estimation of risk - management response to risk – linear programming and risk programming models.

Unit IV: Farm Efficiency and Total Factor Productivity and Agricultural growth

Farm efficiency – economic, allocative and technical efficiency measures; Concept of total factor productivity variations in technical efficiency and total factor productivity and implications to production growth in India

Unit V: Economics of Natural Resources and Sustainability

Natural resources: Renewable and non-renewable - land use pattern - land degradation land use planning optimal management of land, water, forests and fisheries – energy management- common property resource development dynamics of resource use planning for economic growth and sustainability - resource mapping GIS and remote sensing data Books

Course Outcome: After completion of this paper student will be able to:

- Understand the economic theories associated with agricultural production
- Differentiate between the contribution from factors of production and Total Factor Productivity (TFP) the agricultural production
- Learn agricultural management by estimating risk associated with agricultural production

Textbook

- ✓ Gray, L. C. (2013). Introduction to agricultural economics. Read Book Ltd.

References

- ✓ Heady, Earl O., and John L. Dillon, "Agricultural Production Functions" (Ames : Iowa State University Press), 1961 and Heady, Earl O., "Economics of Agricultural Production and Use" (Prentice Hall), 1952
- ✓ Beattie, Bruce R. and C. Robert Taylor, "The Economics of Production", (New York: John Wiley and Sons), 1985.
- ✓ Soni, R.N., "Leading Issues in Agricultural Economics" (Vishal Publishing House), 2008.
- ✓ Doll, John P. and Frank Orazem, "Production Economics - Theory and Applications", (New York: John Wiley and Sons), 1978.
- ✓ Manjunatha, A. V., et al. "Impact of land fragmentation, farm size, land ownership and crop diversity on profit and efficiency of irrigated farms in India." Land Use Policy 31 (2013): 397-405.
- ✓ Ramesh Chand and Pradumna Kumar, "Total factor productivity and contribution of Research investment to agricultural growth in India" National Council for agricultural Economics and policy Research (NCAEP) policy paper 25, 2011.

Paper 3.6.1
Technology & Public Policy
OES7205 (Credit 4)

OBJECTIVES:

To enable students to understand the importance of technology and public policy in response to the increasing complexity of the government activity. The advancements of technology, changes in the social organizational structures, rapid growth of urbanization added to the complexities. The course orients students with emerging and innovative technological inputs of the policy cycle and associated impacts.

CONTENT:

Unit I: Introduction

Definitions and Relevance of Public Policy; Nature, Scope, Importance and Evolution of Public Policy; Developments in Science and Technology Applications of Scientific advancement in Human life. The impact of Globalization in exchange of knowledge and advancement of technology.

Unit II: Technological Development

Emerging technologies: Artificial Intelligence, Space Technology & Defence Technology; Important contributions of Indians in Science and Technology; Indigenization of technology; Developing new technology indigenously.

Unit III: Agenda and Priorities for Technology Policy

Security: Technology to stop extremism; Linkages between development and spread of extremism; Role of state and non-state actors in creating challenges to internal security;

Covid-19: Dedication of technological resources to management, vaccination and logistics surrounding the virus

Other priorities: Impact of technology on biopharma, Thermal power, Digital India Programme for farmers.

Unit IV: Technology Policy Interventions and Implementation

Digitalization of government services; Shift to Digital India and Associated Policies; India's gross expenditure in R&D, Policies on Research parks (RPs) and technology business incubators (TBIs); National Artificial Intelligence Strategy, MOUs with foreign research centres; Indian Institutes of Information Technology law (Amendment) Bill, 2020.

Unit V: Global Trends of Technology policy

AI, Blockchain, Machine learning, Data sciences, e-gov, economics and regulation of platforms; Global case studies of innovative policies in regards to the technological revolution in education, health, culture, social and economic policies, security and defense.

Course Outcome: After completion of this course student will be able to:

- Understand basic concepts of public policy analysis.
- Have an understanding of emerging technologies
- Learn the impact of technological intervention on policy-making
- Develop knowledge of technology policy intervention and implementation.
- Analyze global trends of technology policy.

Text Books

- ✓ Weimer, D. L., & Vining, A. R. (2011). Policy analysis: Concepts and practice. Boston: Longman.

References

- ✓ Rajaram, K. (2014). Science and Technology in India. Spectrum.
- ✓ Agrahari, R. (2018). Science and Technology. MC GRAW HILL EDUCATION PVT LTD.
- ✓ NitiAayog. (2021). Connected Commerce: Creating a Roadmap for a Digitally Inclusive Bharat. NitiAayog.

Specialization I: Corporate Economics I

Paper 3.6.1 Corporate Finance OES7301(Credit 4)

OBJECTIVES:

The course aims at providing understanding of capital budgeting techniques, the advantages of using Net Present Value versus Internal Rate of Return to calculate the value of financing decisions or projects, when and how to use payback periods and risk analysis to rank financing decisions, identify the formulas for calculating cash flows resulting from investments and their use to determine the profitability of a financing decision or project for a business. In terms of corporate finance best practices, students will also learn about the financial and strategic basis for financing decisions, various public and private techniques and products available for both short term and long term financing, techniques for cash flow management, forecasting and planning, and best practices of cash flow management as it applies to real life examples.

CONTENT:

Unit I: Introduction

Finance Manager's Role – Separation of Ownership and Management Objectives of the Firm and Corporate Governance – Financial Statements and Cash Flow – Financial Statements Analysis and Long-Term Planning

Unit II: Working Capital Management

Working Capital Components – Leverage – Cash management – Receivables Management – Inventory Management – Financing Current Assets – Regulation of Bank Finance.

Unit III: Capital Budgeting

Measures of Investment - Choice Investment and Financing Decisions – Time Value of Money – Net Present Value – Internal Rate of Return – Discounted Payback Period – Cost of Capital – Selection of Criteria Risk Return and Opportunity Cost of Capital Valuation of Bonds and Common Stock Scenario Testing and Sensitivity Analysis Strategy V Investments – Practical Problems in Budgeting – Agency, Compensation and Performance Measure.

Unit IV: Patterns of Financing

Internal Funds – Common Stock – Debt – Financial Markets/Institutions – Issue of securities – Venture Capital – Initial Public Offering – Security Sales and Auctions – Private Placements and Public Issue Jun Bonds.

Unit V: Capital Structure & Financing of Long Term Capital

Planning Capital Structure – Capital Structure Choice Extended Probabilistic Analysis – Dividend Payou Policies – Share Valuation – Sources of Long Term Capital – Debt Securities – Debt Policy and Leverage Risk Management.

Course Outcome: After completion of this paper student will be able to:

- Gain the knowledge about the future value of the present investment
- Decide whether an investment decision will be profitable in the future
- Have a thorough knowledge about different methods for collecting capital for an business project
- Understand different terminologies associated with corporate finance

Textbook

✓ Ross, Stephen, Westerfield, Randolph, Jaffe, Jaffrey (February 2002), Corporate Finance, 6th Ed McGraw-Hill Companies.

References

- ✓ Berk, Jonathan, and DeMarzo, Peter (2007), Corporate Finance, Pearson International.
- ✓ Brealey, R.A., Myers, S.C. and Allen, F. (2003), Principles of Corporate Finance, 7th Ed, McGrawHill.
- ✓ Copeland, T., Weston, F., and Shastri, K. (2004), Financial Theory and Corporate Policy, 4th Ed., New York: Addison-Wesley.

Paper 3.6.2 Corporate Governance OES7303 (Credit 4)

OBJECTIVES:

To provide an exhaustive learning of the evolution and development of corporate Governance along with the issues and practices that governs corporate sectors.

CONTENT:

Unit I: Corporate Governance: An Overview

Definitions of Corporate Governance; Need for Corporate Governance; Principles of Corporate Governance Agency Theory; Relationship between Corporate Governance, Corporate Finance, Investments and Shareholders wealth maximizing.

Unit II: Ownership and Shareholders

Economic of organization and information – understanding of the shareholder VS stakeholder concept of governance; Stakeholders and their Effect on Business.

Unit III: Corporate and Board Management

Corporate Ownership structure- Board of directors: types of directors - role, composition, systems and procedures – Functional committees – executive remunerations

Unit IV: Corporate Governance Framework

India's Corporate Governance Framework; SEBI; Company Law and Accounting; CII Code on Corporate Governance; National Code on Corporate Governance (1999); Companies Act 2013.

Unit V: Board Committees and role of professionals

Need –Functions – Advantages – scopes and constitution of Board Committees, Board Charter – terms of reference and accountability and performance appraisals – independence - role of professionals in board committees.

Course Outcome: Upon the successful completion of this course, students will be able to:

- Understand the concepts of corporate governance
- Value the shareholder and stakeholder rights and responsibilities
- Relationship between Corporate Governance, Corporate Finance, Investments and Shareholders wealth maximising
- Solve case studies in the field of corporate governance and apply knowledge to different cases

Textbook

- ✓ Geeta Rani and R K Mishra, Corporate Governance Theory & Practice, Pub. By Excel Books
- ✓ V Sithapathy and Rama Devi Iyer, Corporate Governance Practice & Procedure, Pub. By Taxman

References

- ✓ A.C. Fernando, Corporate Governance, Principles, policies and Practices : Pearson Education.
- ✓ NeetiShikha, Geetanjali Sharma, Corporate Governance in India: Principles and Policies, CENGAGE Publication.
- ✓ Indian Institute of Corporate Affairs, Corporate Governance, Taxmann.
- ✓ Companies Act 2013 and Rules; SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015; Journal and E-Bulletin “Chartered Secretary” and “Student Company Secretary” published by ICSI.

Paper 3.6.3
Advanced Business Economics
OES7305(Credit 4)

OBJECTIVES:

The basic objective of the course is to familiarize students with the key economic concepts and make them capable to apply and use such concepts/principles for effective business administration in a modern environment.

CONTENT:

Unit I: Introduction to Business Economics

Basic Concept of Business Economics: Resource Allocation, Opportunity Cost, The Concept of Production efficiency, Time Value of Money, Risk, Return & Profit; Production Possibility Frontier; Use of Marginal Analysis in Decision Making; Reading and Working with Graphs.

Unit II: Elasticity of Demand & Demand Forecasting

Demand Elasticity- Advertisement Elasticity of sales, Price Expectation Elasticity of Demand; Meaning and Purpose of Demand Forecasting; Methods of Forecasting Demand-Survey Method and Statistical Method; Prerequisites of Good Demand Forecasting.

Unit III: Market Mechanisms, Pricing & Practice

Market Structure & Competition- Market Morphology, The Market Structure; Profit Maximisation and Other Objectives of Business Firm; A Reasonable Profit target: A Pragmatic Approach; Application of Monopoly Theory- Measuring Tax Incidence and Subsidy Effect, Peak-load Pricing by a Monopoly; Prisoners' Dilemma Model; Application of Game Theory to Oligopolistic Strategy.

Unit IV: Market Concentration and Competition

Measures of Market concentration; Strategies to gain market power – Merger and Acquisition, patents and market power; Indian policies to prevent market concentration, Social impact of Market concentration; Competition commission of India – Formation, Role, Jurisdiction and involvement.

Unit V: Factor Market & Pricing

Labour Demand and Supply with Increasing Marginal Productivity; Wage Differential due to Non-homogeneity of Labour; Factor price Transfer Earning and Economic Rent, The Loanable Fund Theory of Interest; Accounting Profit vs Economic Profit; Hawley's Risk Theory and Schumpeter's Theory of Profit; Does Profit Enter the Cost of Production.

Course Outcome: Upon the successful completion of this course, students will be able to:

- An appreciation of fundamental knowledge to deal with basic economic problems
- A thoughtful knowledge regarding individual decision-making
- An understanding of the existing market structure and thinking according to a business decision

Textbook

- ✓ H L Ahuja, Business Economics, S Chand.
- ✓ D N Dwivedi, Essentials of Business Economics, Vikas Publishing House.

References

- ✓ Varian, H. R., Microeconomic Analysis, third edition, W.W. Norton and Co., 1992
- ✓ S K Misra and Puri, Business Economics and Business Environment, Himalaya Publishing House.
- ✓ C A.G. Sekar, C A. B.SaravanaPrasath, Business Economics & Business and Commercial Knowledge, Padhukas Publications, Chennai, 2019.
- ✓ ICAI, Study Material, June, 2020.
- ✓ Geetika, P. G. & Chowdhury, P. R. Managerial Economics, McGraw Hill Education, Latest Edition.
- ✓ Peter. J. Managerial Economics, Pearson Education India, Latest Edition.

Semester IV

Paper 4.1 Indian Economic Policy OES7002 (Credit 4)

OBJECTIVES: This Paper is designed to discuss the Indian economy with special focus on the various economic policies incorporated to cater growth and development in India. This paper introduces the concept of economic growth and development and the features of Indian economy from the overall perspective. It also depicts the growth and challenges of Indian Farming sector and importance of Industrialization for the developing country like India. Further, this paper discusses Indian economy in the international level, particularly during the post economic reforms.

CONTENT:

UNIT - I: The Overview of Indian Economic Policy

The state of Indian Economy and Policy Decision, the major economic policies incorporated: Monetary Policy, Fiscal Policy, Indian Agricultural Policy, Industrial Policies, Foreign Trade Policy-EXIM Policy. The state of Indian Economy after the adoption of New Economic Policy, 1991. Current macroeconomic performance: Current economic deceleration – Supply side and demand side explanations – Government initiatives: Make in India, GST, Demonetisation, Deregulation of petroleum prices – Current issues & highlighted in latest Economic Survey, Union Budget, monetary policy – other contemporary issues on India economy having important ramifications.

UNIT-II: Indian Economic Development and Growth Policies

Economic Growth and Development, Essential Components of Human development; Indexing Human Development in India - indicators, scaling and composition; Recasting Planning in terms of Human Development; Indian Political Economy (1980-2010) and Inclusive Growth. Poverty in India; Public Action and Social Inequality and Economic reforms, basic equality and social security and Health care, local Governance & Social reforms. Indian Economic Reforms from Macro Perspective.

UNIT - III: Three Sectors of the Indian Economy

Agriculture Growth and Industrial Performance in Indian: Broad features of industrial and agriculture growth; Linkage between agriculture and industry; Production linkages, Demand linkages, savings & Investment linkages; Planning for Agriculture - 21st Century perspective, Indian agriculture - emerging perspectives and policy issues; Terms of Trade Between Agriculture and Industry : Industrial growth in 80's - some issues; Government Policy Towards Public Sector Since 1991; Paradigm shift in Industrial Policy; Jobless Growth in Indian manufacturing in 2000s. The state of Agricultural Economy in post Covid Scenario. The present state of tertiary Sector and the impact of COVID on both Industrial and Service Sector of Indian Economy.

UNIT - IV: Indian Planning and Growth Prospective

Objectives & strategy of Planning in India; Regional Planning Policy in India - Regional disparities in India and policy decision to remove regional imbalances, critical review of Regional Planning in India; Economic Growth and Social Development; The role of Development Strategy; Gender Responsive Budgeting and Gender Equity; Federal Finances - Responsibilities and Resources. Role of NITI Aayog in Catalysing Economic Growth and Development.

UNIT - V: Foreign Trade Policy

Growth & Macro Economic Imbalances in India-linkages between growth & fiscal & external balance trends in fiscal & external deficits; Critical Appraisal of Economic Reforms; WTO - Uruguay Round of Financial Act & its Implication for India, Impact of WTO on various aspects of Indian Economy, India's Role at Doha Ministerial Conference, Geneva Framework and update on Trade Negotiations; Foreign Trade Policy Import - Export Policy in pre-reform period, New Trade Policy - The Reform Period, Foreign Trade Policy 2009-14; FDI in Multi-brand Trade & Safe Guards.

Course Outcome: After completion of this paper students able to:

- Learn Indian economic policies such as monetary policy, fiscal policy, agricultural policy, industrial policies, foreign trade policy.
- Understand Indian economic growth and development policies and challenges.
- Understand the concepts of different sectors of Indian Economy.
- Learn Indian Foreign Policies and understand the role of different international institutions.

Textbook

- ✓ R. Datta and K.P.M. Sundaram (2004): Indian Economy, S. Chand, New Delhi.

References

- ✓ Uma Kapila (ed) (2018) Indian Economy since Independence: A comprehensive and critical analysis of India's economy, 1947-2017, Academic Foundation, New Delhi.
- ✓ Frankel, Francie R. (2005): India's Political Economy 1947-2004, OUP.
- ✓ Subramanian, Arvind (2008): India's Turn: Understanding the Economic Transformation, OUP.
- ✓ Government of India: Economic Survey, Recent issues.
- ✓ Reserve Bank of India: Annual Report, Recent issues.
- ✓ Relevant research articles on various aspects of the Indian economy published in leading professional journals in economics.

Paper 4.2 Environmental Economics OES7004 (Credit 4)

OBJECTIVES:

The objective of this course is to develop a good understanding of market failure and externalities, Pare efficiency, maximum social welfare and perfect competition, measures to control pollution and externalities, Pigouvian tax and subsidies, Compensation criterion, and social choice and justice. The course provide students with a basic understanding of the cost of environmental growth and environment degradation, methods of environmental valuation, Environmental concerns like climate change and global warming.

CONTENT:

Unit I: Introduction

Economy-environment interaction; Material Balance Principle; entropy law; market failure; property right open, closed and common access resources; resource economics–environmental economics–ecological economics: characteristics and synergy

Unit II: Environment vs Development

Relation between development and environmental stress; Environmental Kuznet's curve hypothesis – theoretical and empirical evidence; concept of sustainable development; indicators of sustainability; various approaches to environmental accounting

Unit III: Public Goods and Externalities I

Externalities – positive, negative and ecosystem externalities; Market failure; Public goods and bads: characteristics, categories; Efficient provision of public goods and bads; Pricing of public goods and bads; Non-exclusion and commons

Unit IV: Public Goods and Externalities II

Pigouvian solution – taxes and subsidies; Buchanan's theory; Coase's theorem and its critique; Pigouvian and Coasian solution; detrimental externality and non-convexities in the production set; Property rights; collective action.

Unit V: Resource Economics

Exhaustible Resources–Hotelling's rule; Market structures and optimal extraction policy; Exploratory Resource scarcity; Renewable Resources–Characteristics of growth functions and growth rate; Economic models of fisheries; Economics of optimal harvest cycles of forests; Economics of biodiversity

Course Outcome: After completion of this paper student will be able to:

- Understand different theories associated with environmental economics
- Gain good knowledge about the recently developed environment versus development discourses
- Learn about the theories and the relevance of the externalities in the economics

Textbook

- ✓ Kolstad, C., (2012) Intermediate Environmental Economics, 2nd Edition, Oxford University Press.

References

- ✓ Kolstad, C., Environmental Economics, Oxford University Press, 2000.
- ✓ Hanley, N., J.F. Shogren, and B. White, Environmental Economics: In Theory and Practice, Oxford University Press, 2006.
- ✓ Prato, T., Natural Resource and Environmental Economics, Wiley-Blackwell, 1999.
- ✓ Grafton, Q., Adamowicz, W., Dupont, D., Nelson, H., Hill, R.J., Renzetti, S., The Economics of the Environment and Natural Resources, Wiley-Blackwell, 2004.
- ✓ Perman, Roger, Yue Ma, Michael Common, David Maddison, James Mcgilvray, Natural Resource and Environmental Economics – 4th Edition, Pearson, 2012.
- ✓ Conrad, J.M. and C. Clark, Natural Resource Economics – Notes and Problems, Cambridge University Press, 1987.
- ✓ Conrad, J.M. Resource Economics, Cambridge University Press, 2010.

Paper 4.3
Dissertation
OES7082 (Credit 6)

Specialization II: Financial Economics II

Paper 4.4.1
Financial Modelling
OES7102 (Credit 4)

OBJECTIVES:

The course combines applications of various financial corporate and valuation models with excel. It also provides an in depth understanding of various types of derivative structured financial products. The focus is on using Excel and VBA for pricing and valuation of derivatives, equity linked products and understanding of the latest developments.

CONTENT:

Unit I: Corporate Finance Models with Excel

Basic financial Calculations Present Value, Net Present Value, IRR and Multiple IRR, Discounting cash flows, Calculating Cost of Capital, Gordon Model, CAPM, Calculating Cost of Debt, Financial Statement Modelling, Sensitivity procedure, Project Finance Modelling Case study on Building a Model.

Unit II: Excel applications for Portfolio Valuation

Introduction to portfolio models, Calculating efficient portfolios, Computing Variance Co variance Matrix Estimating Betas and Security Market Line, The single index model, Black Littermen approach to portfolio optimization, Event Studies

Unit III: Excel applications for Option Valuation

Pricing options using binomial trees Programming Binomial Option Pricing in VBA, Log normal Distribution The Black-Scholes-Merton Model – using VBA to define Black Scholes Pricing Function, Calculating Implied Volatility, Option “Greeks”.

Unit IV: Excel applications for Fixed Income Valuation

Discount factors, spot rates, forward rates, and yield to maturity, Modelling Term structure, Arbitrage and the Law of One Price, Hedging and immunization

Unit V: Value-at-Risk (VaR)

Calculation with Excel Applied to stock, currencies, and commodities, Applied to linear and non-linear derivatives, and securities with embedded options, Structured Monte Carlo, stress testing, and scenario analysis, simulating data, Bootstrapping, Limitations as a risk measure, Coherent risk measures, Volatility Models.

Course Outcome: After completion of this paper student will be able to:

- Identify the performance of derivatives and equities using Excel and VBA
- Calculate Value-at-Risk (VaR) of stocks, currencies, and commodities using Excel and VBA
- Understand the valuation of portfolio, option, and fixed income using Excel and VBA

Textbook

- ✓ Simon Benninga, Financial Modelling with Excel, 3rd Edition., MIT Press.

References

- ✓ Bill Dalton, Financial Products-An Introduction using Mathematics and Excel, Cambridge.
- ✓ Danielle Stein Fairhurst, Using Excel for Business Analysis: A Guide to Financial Modelling Fundamentals, Wiley.
- ✓ Day Alastair, Mastering Financial Modelling in Microsoft Excel 3rd Edn: A Practitioner's Guide Applied Corporate Finance (3rd Edition), FT Press, 2012.
- ✓ Das, Satyajit, Structured Products, Vol.1 & 2, Wiley, (Latest Edition).
- ✓ Fabozzi, Frank J., Davis, Henry A., Choudhry Moorad (2006), Introduction to Structured Finance Wiley Finance.
- ✓ Stefano, Caselli, Stefano, Gatti (2005), Structured Finance: Techniques, Products and Market, Springer
- ✓ Arnaud de Servigny (2007), Jobst, Norbert (ed.), The Handbook of Structured Finance, McGraw Hill.

Paper 4.4.2 Financial Risk Management OES7104 (Credit 4)

OBJECTIVES:

The objective of this course is to introduce financial risk management concepts and techniques that are widely used. The focus is on market risk and credit risk. The course covers the conceptual understanding and practical methods of risk identification, assessment and measurement. It also covers the risk management and control applications with real world examples. By the end of the course, students should be able to use risk measurement techniques and interpret risk profile of a firm.

CONTENT:

Unit I: Introduction to Financial Risk Management

Terminologies/Basic tenets of risk management, The meaning of risk, Types of risks– Market, Credit, Operational, Reputational, Legal & Compliance risks, like fixed income, foreign exchange, credit and equity Risk Identification and assessment need to quantify their risk- For example Capital allocation, Economic Capital Vs Regulatory Capital, implementing suitable risk management strategies etc., Requirement for Regulatory level risk reporting, Overview of various banking regulations having a bearing on the financial institutions including inter-alia: Basel, CRD IV, Dodd-Frank, Ring-fencing etc.

Unit II: Market Risk- Risk identification and assessment

Analysis of the organization's portfolio and reviewing the asset classes which form a part of this portfolio. Identify the risk factors (eg: interest rate, inflation, equity prices etc.) pertaining to each of the asset classes in the portfolio. Study/Analyse the factors (eg: market liquidity, transaction costs, counterparty risk etc.) which have to be looked into before making the decision to hedge an exposure, Mean variance framework for organization's portfolio risk, Importance of normal distribution in finance, set correlations and the contribution to portfolio risk, Relation between the increasing number of assets and its contribution to reduction of portfolio un-systematic risk.

Unit III: Market Risk - Risk Measurement

Risk measurement parameters commonly used/monitored in market risk management: Portfolio Beta, PV01, Portfolio duration (Macaulay duration, modified duration, effective duration), Key rate duration, Convexity, Spread analysis (Z-spread, Option adjusted spread), Yield curve analysis (concepts of bootstrapping of the yield curve), forward rates, Growing importance of OIS curve. Introduction to modelling in MS Excel, construction of the zero curve, forward rates, basis adjustments to swap curves etc.

Unit IV: Extreme Values, Quantiles, and Value at Risk

Value at Risk, Risk Metrics, Econometric Approach to VaR Calculation, Quantile Estimation, Extreme Value Theory, Extreme Value Approach to VaR, New Approach Based on the Extreme Value Theory, VIX –Theory and Application.

Unit V: Market Risk - Market Risk Management/Control

Role of derivatives in market risk management, Forward contracts, Futures contracts, Options contracts, Swap contracts. Using interest rate derivatives (Cap, Floor, Collar etc.) Greeks Analysis: Definitions of various Greeks, Greeks measurement and analysis (Delta, gamma, theta, rho). Concept of delta hedging using options, introduction to gamma hedging and vega hedging.

Course Outcome: After completion of this paper student will be able to:

- Identify, measure, and assess market risk
- Gain in-depth knowledge about the various methods and tools of financial risk management
- Understand the major concepts in financial risk management

Textbook

- ✓ Fabozzi, F. J. (2010). Financial Risk Management. John Wiley and Sons.

References

- ✓ Steve L. Allen (2012) Financial Risk Management: A Practitioner's Guide to Managing Market and Credit Risk, John Wiley and Sons.
- ✓ Donald R. Van Deventer, Kenji Imai & Mark Mesler (2013). Advanced Financial Risk Management: Tools and Techniques for Integrated Credit Risk and Interest Rate Risk Management (Wiley Finance).
- ✓ Christoffersen, P. (2011). Elements of financial risk management. Academic Press.
- ✓ Horcher, K. A. (2011). Essentials of financial risk management (Vol. 32). John Wiley & Sons.

Paper 4.4.3
Data Analytics
OES7106 (Credit 4)

OBJECTIVES:

This course enables students to gain three critical skills: data analysis and problem solving framework, the ability to perform descriptive analytics and visualization, and the expertise to build and implement the most widely used data science and machine learning algorithms in use today, with R.

CONTENT:

Unit I: The need for Analytics and Understanding Analytics

Decision Making – Heuristics and Biases; The need for analytics; Impact of analytics on business; Being analytically competitive; The difference between analytics and BI; Introduction to the business Analytics model; Types of analytics; Models and algorithms in Analytics; The Analytics Methodology

Unit II: Tool and Tech Landscape

A review of technology used in data storage, data processing, and data science; Popular tools used in Data Science and when to use each.

Unit III: Descriptive Analytics with excel and Tableau

An introduction to Tableau; Using descriptive statistics in analysis and reporting; Advanced reporting with Tableau.

Unit IV: R programming

An introduction to R; Importing and exporting data in R; Data Manipulation with R; Advanced Data Manipulation with R; Data Visualization with R.

Unit V: Data Pre-processing

Data Exploration and Assessment for Data Science; Identifying and dealing with noise in Data; Preparing data for Data Science Modeling.

Unit VI: Predictive Models and ML Models in R

Linear Regression Models and their applications; Logistics Regression Models and Their applications; Time Series Forecasting; Clustering Algorithms and application; Decision Tree Algorithms and application; Random Forest Algorithms and applications.

Course Outcomes: After completion of this paper student will be able to:

- Learn various data analytic techniques and tools which will increase the job market potential of the students.
- Handle the software such as Excel, Tableau, and R for the data analytics
- Understand the efficiency and the improvement of the goodness of fit using the data analytical tools compared to conventional statistical and econometric tools

Textbook

- ✓ Maheshwari, A. (2017). Data Analytics. 1st Edition, McGraw Hill Education, New Delhi.

References

- ✓ Runkler, T. A. (2020). Data Analytics. Springer Fachmedien Wiesbaden.
- ✓ Motwani, B. (2019). Data Analytics with R. Wiley.
- ✓ Acharya, S. (2018). Data Analytics using R. 1st Edition. McGraw Hill Education, New Delhi.

Specialization II: Public Policy II **Paper 4.5.1** **Health Economics** **OES7202 (Credit 4)**

OBJECTIVES:

This course is to analyze theoretical and empirical issues in health using economics tools, namely microeconomics, game theory, behavioral economics and econometrics.

CONTENT:

Unit I: Introduction to health economics

The economic way of thinking about health; health measurement, determinants and long run trends; health and socioeconomic status.

Unit II: Health expenditure

Public and private provision of health services; Out of pocket health expenditure; public health expenditure composition and trend of health expenditure in developed, developing and under developed countries.

Unit III: Health Insurance

Introduction and moral hazard; adverse selection in health insurance; social insurance in India and global examples.

Unit IV: Health and economic development

Asymmetric information; externalities; health, human capital, and economic development; role of government.

Unit V: Health valuation

Mortality risk valuation? static model, life cycle model, empirical models (hedonic wages, stated preference valuing changes in morbidity-model of health production, revealed preference and stated preference approaches, quality adjusted life years.

Course Outcomes: After completion of this paper student will be able to:

- Gain a better understanding the economic theory of health and healthcare through a study of economic models of health, addiction, demand for healthcare and demand for insurance.
- Learn to evaluate and interpret empirical findings in health economics.

Textbook

- ✓ Bhattacharya, J., Hyde, T. and Tu, P. (2013). Health Economics, Palgrave.

References

- ✓ Grossman, Michael (1972): “On the Concept of Health Capital and the Demand for Health”, Journal of Political Economy 80(2).
- ✓ Case, A., Lubotsky, D., and Paxson, C. (2002): “Economic Status and Health in Childhood: The Origin of the Gradient”, American Economic Review. 92(5): 1308-34.
- ✓ Becker, G., and Murphy, K. (1988): “A Theory of Rational Addiction”, Journal of Political Economy 96(4):675-700.
- ✓ Bhattacharya, J.; Goldman, D. and Sood, N. (2009): “Market Evidence of Misperceived Prices at Mistaken Mortality Risks”, Journal of Economic Behavior and Organization 72(1):451-62.
- ✓ Acemoglu, D. and Johnson, S. (2007): “Disease and Development: The Effect of Life Expectancy on Economic Growth”, Journal of Political Economy, 115(6): 925-85.
- ✓ Miguel, E., and Kremer, M. (2004): “Worms: Identifying Impacts on Education and Health in the Presence of Treatment Externalities”, Econometrica, 72(1): 159-217.
- ✓ Articles from journals and working papers.

Paper 4.5.2

Climate Change and Disaster Management

OES7204 (Credit 4)

OBJECTIVES:

This course is to analyze the socio-economic impact of climate change and its effect on developed, developing and under-developed countries. The focus of the course is to motivate students for the research on the frontier areas of climate change and disaster management.

CONTENT:

Unit I: Introduction to the Economics of Climate Change

Economic impact of global warming, greenhouse gases, and CO₂ emission – Emission standards versus economic growth, new developments in alternative energy.

Unit II: Social Cost Benefit Analysis

Market and non-market valuation of impacts, Discounting and its ethical implications for inter-generational equity, Treatment of fundamental uncertainty.

Unit III: Policy Responses to Climate Change

Adaptation and mitigation, Climate change mitigation : Economic policy options, Carbon taxes, tradable permits, Other policy tools: subsidies, standards, R&D, and technology transfer.

Unit IV: Impact of Natural Disasters

Sectoral impacts – tourism, agriculture, health, and human capital, Macro and micro economic impact – direct cost of disasters and long term indirect cost.

Unit V: Managing Natural Disasters

Economic policy instruments for disaster risk management, Economic and Social vulnerability indices and their use for risk management, Cost Benefit analysis for disaster risk mitigation prioritization, GIS and Land Use planning for disaster risk reduction, Technology and disaster management.

Course Outcomes: After completion of this paper student will be able to:

- Gain a better understanding the economic impact of climate change and disasters
- Understand the policy responses to the climate change and natural disasters
- Study the socio-psycho-economic impact of natural calamities
- Use of technology to mitigate challenges of climate change and natural disasters

Textbook

- ✓ Chouhan and Bharti (2010) Climate Change, Disaster Management and Environment, Discover publishing house pvt limited.

References

- ✓ Harris, J. M., Roach, B., & Environmental, J. M. H. (2007). *The economics of global climate change*. Global Development And Environment Institute Tufts University.
- ✓ Stern, N. (2008). The economics of climate change. *American Economic Review*, 98(2), 1-37.
- ✓ Balint, T., Lamperti, F., Mandel, A., Napoletano, M., Roventini, A., & Sapio, A. (2017). Complexity and the economics of climate change: a survey and a look forward. *Ecological Economics*, 138, 252-265.
- ✓ Goulder, L. H., & Pizer, W. A. (2006). The economics of climate change.
- ✓ Coppola, D. P. (2006). *Introduction to international disaster management*. Elsevier.
- ✓ O'Brien, G., O'keefe, P., Rose, J., & Wisner, B. (2006). Climate change and disaster management. *Disasters*, 30(1), 64-80.
- ✓ Pinkowski, J. (Ed.). (2008). *Disaster management handbook*. CRC press.

Paper 4.5.3
State, Market, & Economic Policy
OES7206 (Credit 4)

OBJECTIVES:

This course is designed to familiarize students with the basic concepts, theories and models of economic market and the state which are relevant to public policy. This helps the student to obtain an in-dept understanding the role of state, market and economic policies in contemporary political, economic, an comprehensive manner.

CONTENT:

Unit-1:Introduction to State, Market and Economic Policy

Introduction to State, Market and Economic Policy. The role of state, market in formation of economic policy. **The policy inputs, outputs and outcomes.** Constraints in Policy Making.

Unit-II: Factors Affecting Development

Poverty, Inequality and Unemployment. Definitions, causes; measurement and status, The role of the state. Market Intervention. Agriculture. Policies attempting to revolutionize agriculture. Jobless Growth in India. Reasons and Consequences.

Unit-III:Agenda Setting through Monetary & Fiscal Policy

Monetary Policy in India: Inflation, deflation, Recessionary and Inflationary Scenarios. Monetary Policy tool and Money Supply in India. Banks and Financial Markets; Privatization and Reforms in Banking and Insurance, fiscal multipliers, compensatory fiscal policy, functional finance approach, fiscal policy for inflation, full employment and economic growth.

Unit-IV: Policy Formulation, Planning and the Budget

Development models: The Role of the State in the Economy. The Government Budget: Revenue Budget, Capital Budget, Government Deficits. Budgetary procedure in India. Types of Budgets in India. Economic Planning in India. Planning commission v/s NITI Aayog, Five Year Plans, Centre state Finance Relation Finance commission in India. LPG policy in India.

Unit-V:Policy Interventions and Economic Policy

Agriculture: Electronic Markets, PPP-model, Farm Bills, Money: The impact of Demonetization on the economy. Role of Covid-19 on Economic Policy. Socio-Economics: Development Poverty eradication programmes, poverty and resource policy, tribal rights and issues, livelihood mission. MNERGS, MSME Distributive impact of economic policies, development versus growth, determinant of growth and development:International Economics: Make in India, industrial corridors, black money, international treaties and organisations, India's policies with neighbours.

Course Outcome: On completing the course students will be able to:

- Define and remember basic concepts of economics applicable to public projects
- Explain and identify key factors affecting/ determining market variables
- Compare and evaluate different economic Policies in India

- Describe and evaluate trends in State policy

Textbooks

- ✓ Singh, R. (2021). INDIAN ECONOMY 11/ED. McGraw Hill Education.
- ✓ Verma, S. (2021). The Indian Economy . . .An Analysis of Economic Survey 2019-20 & Budget 20-2021. Unique Publishers India Private Limited.
- ✓ Kapila, U. (2021). Understanding the Problems of Indian Economy. Academic Foundation.
- ✓ Sharma, R.S. and D.N. Jha, (1974), 'The Economic History of India up to A.D.1200: Trends and Prospects', Journal of the Economic and Social History of the Orient, vol. 17.
- ✓ Weimer, D. L., & Vining, A. R. (2011). Policy analysis: Concepts and practice. Boston: Longman.

References

- ✓ Lindsey, B., Teles, S. M., Compton, S., & Audio, T. (2018). The Captured Economy: How the powerful Enrich Themselves, Slow Down Growth, and Increase Inequality. Tanor Audio.
- ✓ Ashwani, D. G. M. (2017). Indian Economy, 72nd Edition. S CHAND & Company Limited.
- ✓ Bellinger, W. K. (2015). The Economic Analysis of Public Policy (2nd ed.). Routledge.

Paper 4.6.1
Specialization II: Corporate Economics II
MNCs and Industrial Technology
OES7302 (Credit 4)

OBJECTIVES:

This course tries to focus on the role and importance of MNCs in bringing an additional capital inflow extended trade activities, promotion of foreign direct investment and overall economic growth through creating a positive balance of payment. It also brings a thorough ideas on how MNCs are becoming the source for the transfer of technology, introducing technical knowhow and product innovation for a country like India.

CONTENT:

UNIT-1: The Evolution of MNCS and Industrial Technology

The Nature and Scope of MNCS, The New Economic Policy and the arrival MNCS after 1991, FDIIs, FII The present trend of MNCs in India. The economic implications of MNCs. The Role of Technology and Innovation in pre-independence and post-independence Period.

UNIT-2: The Role MNCs and Industrial Technology Inter-Linkage

MNCs and Transfer of Technology Mechanism, Introduction of Technical knowhow, The role of MNCs in Manufacturing and Marketing, Growth of Service Sector through MNCs., The role of MNCs in the field of Industrial Technology (Automation, Engineering, Manufacturing, Data and Analytics etc.)

UNIT-3: MNCs and Socio-Political Economy

The role labour and land for the growth of MNCs, The transfer of Surplus Labour ,Import Tariff and Quota

and MNCs, industrial policy statements, MRTP Act, FERA and FEMA.

UNIT-4: MNCs and Sustainability

The Environmental impact of MNCs, R&T Intensity and Sustainability Practices, The role of Corporate Ethics and CSR in attaining Sustainability, Negative Externalities, Latest Policy measures to attain Sustainability.

UNIT-5: MNCs and Indian Economy

The Role of MNCs in generating Income and Employment, Promotion of Exports, MNCs and India's Balance of Payment, Make in India and Skill India Campaigns, The role and impact of MNCs and Industrial Technology in attaining Economic Growth (Growth in GDP, GNP etc.)

Course Outcome: After completion of this paper student will be able to understand:

- The need and impact of MNCs in attaining Economic Growth and Development
- To learn about the industrial revolution and the role of MNCs after the adoption of the New Economic Policy
- The broad prospects of MNCs and its impact in the field of Technological innovation, Employment generation and overall economic growth with Sustainability

Textbooks

- ✓ Technology and Industrial Parks in Emerging Countries by Andres Rodriguez Pose, Daniel Hardy.
- ✓ Multinational Corporations and Foreign Direct Investment: Avoiding Simplicity, Embracing Complexity by Stephen D Cohen.

References

- ✓ Chakrabarty Subrata & Wang Liang (2012), "The Long-Term Sustenance of Sustainability Practices in MNCs: A Dynamic Capabilities Perspective of the Role of R&D and Internationalization", Journal of Business Ethics, 110, 205–217.
- ✓ Dunning, J. H. and R. Narula (1996) 'The Investment Development Path Revisited: Some Emerging Issues', in J. H. Dunning and R. Narula (eds), Foreign Direct Investment and Governments: Catalysts for Economic Restructuring, New York: Routledge.
- ✓ Kumar, N. (1998a) 'Technology Generation and Transfers in the World Economy: Recent Trends and Prospects for Developing Countries', in N. Kumar (ed.), Globalization, Foreign Direct Investment and Technology Transfer: Impacts on and Prospects for Developing Countries, London and New York: Routledge, pp. 11–42.
- ✓ Teece, D. J. (1977) 'Technology Transfer by Multinational Firms: The Resource Cost of International Technology Transfer', Economic Journal, vol. 87(346), pp. 242–61.
- ✓ OECD (1998) Foreign Direct Investment and Economic Development: Lessons from Six Emerging Economies, Paris: OECD Publications.
- ✓ OECD (1995) Foreign Direct Investment: OECD Countries and Dynamic Economies of Asia and Latin America, Paris: OECD Publications.
- ✓ Wong, P. K. (1995) 'Technology Transfer and Development Inducement by Foreign MNCs: The Experience of Singapore', Paper presented at the International Conference on Industrial Strategy for Global Competitiveness of Korean Firms, Seoul, Korea. 10 January, 1995.
- ✓ Kanagasabapathy, K., Tilak, V., Krishnaswamy, R. (2013). A rethink on India's foreign trade policy. Economic and Political Weekly, 48 (31), 137-139.

- ✓ Kumar, N. (2015). FDI and portfolio investment flows and development: A perspective on India experience. In U. Kapila (ed.): Indian economy since independence, 26th ed. Academic Foundation.
- ✓ Sayed Ali Fazal, Sazaliabd, Wahab (2014), "Review on Technology Transfer in Context of Multinationals Corporations".

Paper 4.6.2 Corporate Risk Management OES7304 (Credit 4)

OBJECTIVES:

The course is designed for master students and represents an upper level course. The course examines various types of risks (market risks, credit risks and operational risks) and risk management procedures in the context of the general framework of enterprise-wide risk management (ERM). The course considers issues of risk measurement, risk aggregation, performance evaluation, capital allocation and strategic decision making.

CONTENT:

Unit 1: Introduction to Risk Management

Why manage risk? How should firms organize risk management? Evolution of risk management, creating value with risk management (reducing distress costs, funding disruptions, taxes, shareholder costs, managerial incentives, large shareholders, planning costs). Risk monitoring versus managing risk, Identification of risk. Risk mapping, sources and types of risk; currency risk, fixed income risk, equity risk, commodity risk, credit risk, market risk, operational risk.

Unit 2: Measuring Market Risks

Exposure measurement, expected and unexpected loss, value-at-Risk (VaR), volatility and correlations, Delta normal valuation, Riskmetrics™ approach, Historical simulation, Monte Carlo simulation method implementation and model risk, Back testing of VaR, Derivatives and VaR. VaR and fat tails, Expected shortfall and other tail risk measures, VaR in the presence of liquidity risks, Applications of VaR and other risk measures to non-financial corporations, EaR and CFaR, Corporatometrics™, Stress testing and scenario analysis.

Unit 3: Managing Market Risks

Managing currency risk, measuring interest rate risks, duration and convexity, duration VaR, managing commodity risk, currency and interest rate derivatives, swaps, caps and floors, exotic structures and hybrid securities.

Unit 4: Measuring and Managing Credit Risk

Probability of default, loss given default and recovery rates, credit scoring, credit spreads, contingent claim approach (Merton's model) and the KMV Model. Credit Metrics™ and Credit Risk+, default and default-time correlations, risk mitigation techniques (including netting, rating triggers, and collateral), credit derivative

credit default swaps (CDS) and credit linked notes.

Unit 5: Firm-wide Risk Management Framework

Cost of bearing and reducing risk across the firm (marginal and optimal), definition of risk capital, using risk measure to set the optimal amount of capital, risk aggregation, estimating a firm-wide loss distribution, correlations across market, credit, and operational risk, allocation of risk capital across the firm, RAROC models, Applications of RAROC to evaluation of efficiency of work (backward-looking), optimal capital distribution (forward looking), information for the stakeholders, managerial compensation, Risk measures an investment policy, Evaluating the performance of risk management systems, Risk measures an compensation, Strategic decisions, Evaluating strategic risks, Reallocating price risk to facilitate strategic acquisitions, Sources of value creation, Real options and their applications in corporate risk management, Failures in risk management, Future trends in corporate risk management.

Course Outcome: After the completion of course students will be able to:

- Understand the classification of risks
- Evaluate risk exposure
- Describe the process of risk measurement, risk aggregation, performance evaluation, capital allocation and strategic decision making
- How and when to use risk management procedures

Textbook

- ✓ James Lam. Enterprise Risk Management: From Incentives to Controls, Second edition, Wiley Finance 2014 5.2.

References

- ✓ Doherty N. Integrate Risk Management: Techniques and Strategies for Managing Corporate Risk. Englewood Cliffs. NJ: Prentice-Hall, 2000.
- ✓ Meulbroek L. Integrate Risk management for the firm: A Senior Manager's Guide // Harvard Business School. 2002.
- ✓ Enterprise Risk Management – Integrated Framework (2004). The Committee of Sponsoring Organizations of the Treadway Commission.
- ✓ Rene Stultz. Risk Management and Derivatives, 2002.
- ✓ Alternative Risk Transfer: Integrated Risk Management through Insurance, Reinsurance, and the Capital Markets (The Wiley Finance Series). 2005.
- ✓ Kevin Dowd. Measuring Market Risk. 2-e. WILEY Finance. 2005. Philippe Jorion. Value at Risk. McGraw Hill, 3e, 2007.

Paper 4.6.3
Capital Market
OES7306 (Credit 4)

OBJECTIVES:

This course is designed to expose the students to the world of capital markets. It is intended to enable the students to learn the working mechanism of stock exchanges.

CONTENT:

Unit 1: Introduction to Capital Market

Organizational structure of financial system, Financial markets, Need for capital market, Functions of the capital market, Capital market instruments: preference shares, equity shares, non-voting equity share company fixed deposits, warrants, debentures and bonds. Indian capital market, Authorities governing capital market in India.

Unit 2: Securities Market Intermediaries

Primary Market and Secondary Market Intermediaries: Role and Functions, Merchant Bankers, Stock Brokers, Syndicate Members, Registrars, Underwriters, Bankers to an Issue, Portfolio Managers, Debenture Trustees, Foreign Institutional Investors, Depositories, Depositories Participants, Custodians, Credit Rating Agencies, Venture Capitalists.

Unit 3: Debt and Money Market

Debt Market: Instruments, Listing, Primary and Secondary Segment, Growth of Money Market in India Structure and Institutional Mechanism, Money Market Instruments: Treasury Bills, Commercial Bill Commercial Paper, Factoring Agreements & Discounting of Bill.

Unit 4: Stock Exchange

History, meaning, functions, stock exchange versus commodity exchange, stock exchange traders, regulation of stock exchanges, steps in trade trading, BSE and NSE, SEBI: functions and working.

Unit 5: Mutual Funds

Mutual Fund: Introduction, Definitions, Schemes, Risks Involved, Setting Up of Mutual Funds, Role in Financial Market. Advantage of Investment in Mutual Fund, Concept of Trustee and Asset Management Company, Legal & Regulatory Framework, Offer Document, Accounting Valuation & Taxation, Investment Management: Equity & Debt Portfolio, Measuring & Evaluating Mutual Fund Performance, Investor's Rights and Obligations.

Outcomes: After completion of this course, the students will be able to:

- Understand the working mechanism of capital market
- Do research on capital market
- Acquire thorough knowledge on stock market and mutual funds so that they can go for investment in capital market in future

Textbooks

✓ E. Gordon and K. Natarajan: Capital Market in India; Himalaya Publishing House, Ramdoot Dr. Bhalerao Marg, Girgaon, Mumbai - 400004.

References

✓ Sanjeev Aggarwal: Guide to Indian Capital Market; Bharat Law House, 22, Tarun Enclave, Pitampura, New Delhi – 110 034.

✓ Frank J. Fabozzi and Franco Modigliani: Capital Markets Institutions and Instruments, Prentice Hall, 2000, New Delhi.

✓ Rakesh Chakraborty and Sankar De: Capital Markets in India, Sage Publications, 2011, New Delhi, India.

✓ Shashi K Gupta, Nishja Aggarwal and Neeti Gupta: Financial Institutions and Markets: Kalyani Publishers, 4863/2B, Bharat Ram Road, 24, Daryaganj, New Delhi -110002.

MASTER OF COMMERCE

[M. COM.]

COURSE STRUCTURE & SYLLABUS

MASTER OF COMMERCE

The salient features of M.Com. Course Curriculum are:

The Master's of Commerce (M.COM) Programme offered by Department of Commerce; School of Social, Financial and Human Sciences, KIIT deemed to be university is a 2 year Post Graduate (P.G.) Programme in Commerce.

The education system in the emerging scenario demands to enrich students so as to develop a holistic personality. Therefore, the focus is based on the four pillars of education which are learning to know, learning to do, learning to live together, and learning to be. The present situation of business education requires total over-hauling and restructuring in the light of changed socio-economic scenario of the global economy in the context of Industry 4.0. The dynamic nature of global business demands a pool of competent human capital for which relevant education is essential in terms of timeliness, speed, flexibility, and dynamism.

The focus of Commerce and Business Education is aimed at improving the students' abilities and helping them to become a competent business leader who can contribute to nation building. Commerce education is not related only with knowing how to organize and apply skills related to business, trade, commerce, industry, and economy, but it further accelerates the process of thinking in a pragmatic manner about nation building through effective utilization of skills, resources, manpower, and one's abilities.

The objective of the Programme is to develop a commerce post-graduate who can meet the present and the future requirements of industry and economy. It emphasizes on developing the competent persons who can work as the contemporary and future leaders of the industry and business.

The programme's teaching methodology and approach are designed to leverage technology and maximise interaction seamlessly and simultaneously. The programme follows a pedagogy that is a blend of Lectures, Case Studies, Lecture-discussions, Behavioural and Computer-based Simulations, Projects, Assignments, Class Presentations, Quizzes etc.

- Commerce itself is an interdisciplinary subject, therefore, proper care has been taken to integrate courses covering various domains like Accounting, Management, Finance, Taxation, Law, Marketing, Human Resource, Economics, Statistics, Information & Communication Technologies, Entrepreneurship, etc.
- The duration of the M.Com. is two academic years split into four semesters with a total of 104 credits. Keeping in view the needs of the Commerce students Ability & Skill Enhancement Courses have been designed in a manner that provides relevant knowledge and skills. In all, twenty-six courses/papers have been developed with an idea to encompass all possible domains of knowledge and skills. Sessional/Practical papers (Codes: 81 – 99).
- The objectives are to mentally prepare the students to learn various courses/ subjects in the domain of Commerce and Business leading to a post-graduate degree.
- Keeping in view the objectives and learning outcomes outlined in each course, proper care has been taken, to provide practical exercises for each unit in a course, so that the students gain hands on experience (learning by doing) apart from textbook based theoretical knowledge.
- As a Dual Specialization, student must choose any one Specialization of their choice as major specialization and one paper from any one of remaining specializations as minor specialization.

- Summer Internship of 6 to 8 weeks' duration after completion of the second Semester, followed by Project Report and Viva-voce examination during the third semester has been made compulsory to enable the students to have hands on experience in real life business situations.
- Dissertation/Project work has been provided in the fourth semester involving application of knowledge in exploring/critical analysis/solving issues related to a real-life situation. The courses are designed keeping in view the employability, research, and innovation in the field of Commerce and Business especially in Accounting, Management, Finance, Marketing, Human Resource, Computer Applications in Business, Taxation, Business Laws, and Entrepreneurship.
- The learning outcomes for each course has been carefully designed to help students to have experiential learning in various domains of Commerce discipline.
- The teachers are expected that while delivering a lecture in a classroom situation, they should use ICT based teaching learning andragogy and various interactive teaching and learning techniques like case studies, simulation, role play, etc., to have better engagement of the students and effective teaching learning process. It is also expected that character building of students, development of holistic personality, values and ethics, etc., should be the prime focus in the teaching learning process so that they become good global citizens.

Aims of M. Com. as a programme is to:

- Provide a conducive environment that holistically engages students through an all-encompassing knowledge dissemination
- Widen the scope and sharing in-depth knowledge of the course enabling them to undertake further studies in Commerce & allied areas on multiple disciplines concerned with Commerce
- Construct a sound theoretical footing, where standards are acquainting with the changing market practices
- Encourage the students to be habituated with advanced range of generic skills those are helpful in employment, internships, and social activities
- Formulating real-life business problems and provide innovative solutions to enable the students to be future ready management leaders who are compassionate and yet efficient and effective in managing as such.

In order to achieve the programme goals following measures would be adopted:

- Regulatory curriculum reform based on a Learning Outcomes-based Curriculum Framework
- Enriching the quality of teaching and research by using modern tools and techniques
- Enlightening learning environment through ICT based hands-on approach to students
- Involving students in research promotion, discussions, problem-solving, case analysis and out of the box thinking
- Motivating students to understand various concepts of commerce & apply in real life situations
- Acquaint the students in involving future research promotion.

Exam Evaluation Scheme:

The M.Com. Programme will follow a continuous examination and evaluation system in the following pattern:

Activity-based Learning	30 Marks
(Class Participation, Assignments, Quiz, Class tests, Presentation, etc.)	
Mid-Semester (Written Exam – 1 Hour)	20 Marks
End-Semester (Written Exam – 2 Hours)	<u>50 Marks</u>
Total	<u>100 Marks</u>

The evaluation system for Sessional/Practical Papers will be as follows:

Dissertation/Project Report	50 Marks
Presentation, & Viva-voce	<u>50 Marks</u>
Total	<u>100 Marks</u>

System of Evaluation (Grading System)

A seven-point grading system on a 10-point scale is followed for grading in the examinations. The details are given in a table below:

<u>Qualification</u>	<u>Grade</u>	<u>Score on 100</u>	<u>Point</u>
Outstanding	'O'	90 to 100	10
Excellent	'E'	80 to 89	9
Very good	'A'	70 to 79	8
Good	'B'	60 to 69	7
Fair	'C'	50 to 59	6
Below average	'D'	40 to 49	5
Failed	'F'	Below 40	2

CREDIT POINT = CREDIT X POINT for each course item.

CREDIT INDEX (CI) = \sum CREDIT POINT of all course items in a semester.

Semester Grade Point Average

SGPA = $CI / \sum \text{CREDITS}$ (for a semester)

Cumulative Grade Point Average

$$CGPA = \frac{[\sum \text{CI of all previous semesters up to current semester}]}{[\sum \text{CREDITS of all previous semesters including the current semester}]}$$

Paper-1.1
OCB6001: ADVANCED ACCOUNTING

To expose students with definitive and comprehensive accountancy covering advanced and specialized accounting for companies as well as several types of organizations.

Unit- 1: Corporate Reconstruction:

Internal and External Reconstruction -Computation and Discharge of Purchase consideration, Methods of Amalgamation, Inter-company, and Cross holdings,
Internal Reconstruction, Demerger/ Hiving off/ Spin off, External Reconstruction

Unit – II: Holding & Subsidiary Companies:

Consolidation – Basic Concepts, Bonus Issue, Investments in Preference Shares, Different Reporting dates, Different Accounting policies, Disposal of Investment in Subsidiary, Consolidated P/L Account and Balance Sheet, Chain holdings and Cross holdings, Foreign Subsidiaries, Associates, Joint Ventures

Unit – III: Double Account System (Electricity Companies):

Meaning, Definition and Difference between Single and Double Account System, Final Accounts under Double Account System, Revenue Account, Net Revenue Account, Capital Account and General Balance Sheet as per Electricity Supply Act.

Unit – IV: Accounting for Banking Companies:

Different Systems of Posting, Different Statutory Books to be Maintained, P/L Account, P/L Appropriation Account, and Balance Sheet as per Banking Regulation Act.

Unit – V: Accounting for Insurance Companies:

Life Insurance Companies, and the Statutory Books to be Maintained. Statutory Provisions in Preparing the Revenue Account, Verification Balance Sheet, and Balance Sheet. Marine and Fire Insurance Accounts.

Course Outcome: After completion of this paper student will be able to -

- Develop Insights about Corporate Restructuring and Accounting for various Types of Restructuring
- Present and Analyse Consolidated Financial Statements of Holding and Subsidiary Companies
- Understand Double Account System and Prepare Final Accounts of Electricity Companies
- Develop the Skill of Preparation of Financial Statements of Banking Companies
- Gain Knowledge and Competency in Accounting for Insurance companies.

Textbook

- ✓ Advanced Accountancy Volume-II – Maheshwari & Maheshwari – Vikas Publishing

Reference Books

- ✓ Modern Accountancy Volume II – Hanif Mukherjee – Mc Graw Hill Publication
- ✓ Financial Reporting; M P Vijay Kumar – Snow White Publication

Paper-1.2
OCB6003: ADVANCED FINANCIAL MANAGEMENT

The Objective of this course is to enable the students to understand the financial management in the context of a corporate entity and acquaint them with different dimensions of financial management with application of the relevant tools and techniques of financial decision – making shareholders wealth maximization.

UNIT-I: Introduction to Financial Management:

Objectives of FM – Profit Maximization vs. Wealth Maximization. Models of Wealth Maximization – EVA & MVA; Shareholders and Management conflict. Valuation of Securities, Risk-return Relationship – Markowitz Model and Capital Asset Pricing Model.

UNIT-II: Capital Investment Decisions:

Capital Budgeting – Estimation of Cash Flows, Techniques of Evaluation (Non-Discounted Cash Flow and Discounted Cash Flow Methods), Measurement of Risk and Uncertainty with Capital Budgeting

UNIT-III: Capitalization, Financial Structure and Capital Structure:

Financing Decision – EBIT-EPS Analysis, Leverage, Cost of Capital, and Value of Firm, Capital Structure & Short-term Financing (Money Market Instruments).

Models of Capital Structure–Net Income Theory, Net Operating Income Theory, Modigliani-Miller Theory, Traditional Approach theory.

UNIT-IV: Dividend Decision:

Dividend Decision vs. Valuation of Firm, Dividend Decision vs. Wealth Maximization, Theories of Dividend: Walter's Model, Gordon's Model and Modigliani and Miller's Hypothesis. Determinants of Dividend Policy and its Constraints.

UNIT-V: Management of Current Assets:

Computation of Working Capital under different forms of Organization, Management of Cash and Cash Equivalents – Determinants of Cash Holding and Models of Cash and Marketable Securities Management. Management of Receivables – Determinants and Models of Receivables Management, Management of Inventories – Determinants of Inventories and Models of Inventory Management.

Course Outcome: After completion of this paper student will be able to -

- Understand the concept of Financial Management, Valuation & Risk Management
- Develop the skill of Capital Investment Decisions of corporates
- Equip themselves with concept of capitalization, financial structure, and capital structure
- Gain insights about determinants of Dividend, Dividend policies and dividend decisions
- Enable the skills for management of Current Assets & Working Capital

Textbook

- ✓ Financial Management, Theory, Concepts & Problems - Rastogi P.R, Taxman.

References:

- ✓ Financial Management - Pandey, I.M. Vikas Publishing House, Delhi.
- ✓ Financial Management and Policy - Van Home, James C, Pearson Education, New Delhi.
- ✓ Financial Management - Khan MY, Jain PK, Tata Mc Graw Hill, New Delhi.
- ✓ Financial Management - Archer, Stephen H., Choate G Marc, R. George, John Wiley, NY.

Paper 1.3
OCB6005: ADVANCED MARKETING

Objectives: To encourage students to understand the nature and scope of marketing and its role in industry and society. The emphasis is on the application of concepts and issues of marketing within the local and international contexts where relevant.

Unit I: Introduction & Marketing Environment

Marketing, definition, process, Customer needs, wants and demands, Market offerings – goods, services, experiences, Customer value and satisfaction, Marketing management orientations, Customer relationship management, definition, Creating customer loyalty and retention, Building customer equity, Marketing mix, a brief introduction, 4Ps, 7Ps. Analyzing the marketing environment: -the Micro-Environment, the Macro-Environment

Unit II: Consumer insights and consumer behaviour

Marketing Information: -Internal data, Competitive market intelligence and marketing research. Consumer buying behaviour: - Introduction, Characteristics affecting consumer buying behaviour, Types of buying decision behaviour, Consumer buyer decision process, Business buying behaviour. Segmentation: - Segmenting consumer markets, Segmenting business markets, Segmenting international markets, Requirements for effective segmentation. Market Targeting, Positioning strategy.

Unit III: Product and Pricing Strategy

Product strategy: - Goods, services and brands, The new product development process, Product life-cycle strategies.

Pricing - definition, Price elasticity of demand, Major pricing strategies, new product pricing, Product mix pricing, Price adjustments, International pricing

Unit IV: Distribution and Promotion Strategy

Nature and importance of Channels, Channel behaviour, Marketing logistics, Retailing and Wholesaling. Promotion: The promotion / communication mix, Advertising, Public relations, Personal selling, Sales promotion, Direct marketing, Digital and online marketing

Unit V: Global Marketing and Society

Deciding how to enter the market, Social criticisms of marketing, Consumer action, Marketing ethics, Marketing in non-profit organisations.

Textbooks:

- ✓ Principles of Marketing, Indian Edition. Kotler et al., Pearson Education.

Reference Books

- ✓ Essentials of Marketing, Blythe, Pearson.
- ✓ Foundations of Marketing. International edition. Pride et al., Cengage, South-Western. Principles of Contemporary Marketing. Boone et al., Cengage South-Western.
- ✓ Principles and Practice of Marketing. Jobber et al., McGraw Hill.

Paper-1.4

OCB6007: CORPORATE LEGAL FRAMEWORK

OBJECTIVE: To acquire the ability to analyses, interpret, and apply the provisions of the company law; analyses the significant provisions of SEBI and other select economic laws.

CONTENTS:

UNIT -I: Companies Act 2013 – Basics & Board of Directors

Overview – Applicability, Structure, Schedules, and important definitions; Board of Directors – Basics, disqualifications, DIN, Appointment of Directors, Independent Director, Vacation, Removal and Resignation; Board Meetings & Committees.

UNIT-II: Companies Act 2013 – Powers of Board, Managerial Personnel, and Winding-up

Powers of Board – General powers, powers exercisable at Board Meeting, powers requiring special resolution, powers w.r.t. donations and contributions, Interested Directors, Related Party Transactions, Loans, and Investment.

Managerial Personnel – Managing Director, Whole-time Director, Manager, Key Managerial Personnel, Managerial Remuneration; Winding Up – Dissolution, Insolvency, and Winding up, grounds for winding up.

UNIT-III: SEBI Act 1992

Aims & Objectives, Major Concepts & Provisions, Functions of the Board Finance, Accounts and Audit; Penalties & Adjudication

Establishment, Authorities, Jurisdiction, and Tribunal

UNIT- IV: FEMA 1999

Introduction, Board Structure, Regulations & Management, Contraventions & Penalties, Misc. Provisions

Foreign Contribution Regulation Act 2010: Definitions, Regulations, Misc. Provisions

UNIT - V: Insolvency & Bankruptcy Code 2016

Preliminary, Corporate Insolvency Resolution Process, Liquidation Process, Misc. Provisions Information Technology Act 2000: Aims & Objectives, Concepts & Important Provisions, Regulation, Appointment, Duties, Penalties, & Adjudication, Misc. Provisions

Course Outcome: After completion of this paper student will be able to -

- Have an insight of the Basics of Indian Companies Act and Board of Directors.
- Develop an idea on powers of the board, managerial personnel, and winding up.
- Gain awareness about the SEBI Act and their norms.
- Gain knowledge about the FEMA Act, and Foreign Contributions Regulations Act.
- Understand the concepts of IBC 2016 and Information Technology Act.

Textbooks:

- Corporate & Economic Laws – CA Pankaj Garg – Taxmann’s Publication
- Corporate and Economic Laws – CA CS Manish Bhandari – Bestword Publications Pvt Ltd.

References:

- ✓ Company Law- K.C. Garg, & Vijay Gupta, Kalyani Publisher
- ✓ SEBI Guidelines and Listing Companies: V.A. Avadhani - Himalaya Publishing House

Paper- 1.5

OCB6009: ORGANISATIONAL BEHAVIOUR

The Objective of this course is to help students understand the Conceptual Framework of Interpersonal and Organizational Behavior.

CONTENTS:

UNIT I: Organisational Behaviour:

Organisational Behaviour- Concept and Significance.

Relationship between Management and Organizational Behaviour; Attitudes; Perception; Learning; Personality.

UNIT II: Group Dynamics and Team Development:

Interpersonal and Group Behaviour, Group Dynamics- Definition and Importance, Types of Groups, Group Formation, Group Development, Group Composition, Group Performance Factors; Group Decision Making Merits and Demerits.

Motivation: Process of Motivation.

Theories of Motivation - Need Hierarchy Theory, Theory X and Theory Y, Two Factor Theory, Alderfer's ERG Theory, Mc Clelland's Learned Need Theory, Victor Vrooms Expectancy Theory, Stacy Adams Equity Theory.

UNIT III: Leadership:

Leadership Concept; Leadership Styles; Leadership Theories- Trail Theory, Behavioral Theory, Fiedler's Contingency Theory; Hersey and Blanchard's Situational Theory; Managerial Grid; Likert's Four Systems of Leadership.

UNIT IV: Interpersonal and Organizational Communication:

Concept of Two-way Communication; Communication Process. Barriers to Effective Communication; Types of Organizational Communication. Improving Communication; Transactional Analysis in Communication. Stress Management.

UNIT V: Organizational Conflict:

Dynamics and Management; Sources, Patterns, Levels, and Types of Conflicts. Traditional and Modern Approaches to Conflict.

Functional and Dysfunctional Organizational Conflicts; Resolution of Conflict.

Course Outcome: After completion of this paper student will be able to -

- Understand the Concepts of Organizational Behavior
- Learn about Group Dynamics, Team Spirit Development, and Motivation Theories
- Have a Better Insight about Leadership Concept, Styles, and Theories
- Know the Basics of Interpersonal and Organizational Communication
- Develop Competence on Sources and Types of Organizational Conflicts and their Resolution.

Textbook

- ✓ Organizational Behavior: S. S. Khanka- S. Chand

- ✓ Organizational Behavior – Nelson, Barik, Khandelwal - Cengage

Reference books:

- ✓ Organisation Behavior: O.P. Rai- Wisdom Publication (Varanasi)
- ✓ Management: Robbins, Stephen P and Mary Coulter- Pearson Education, Delhi.
- ✓ Organizational Behavior: Neustrom, John W, and Keith Davis - Tata McGraw-Hill, New Delhi.
- ✓ Understanding Organizations: Organization Theory and practice in India: NY. Shukla, Madhukar Pearson Education, Delhi.

Paper- 1.6

OCB6011: IT FOR BUSINESS

To expose students with the horizons of information technology and its implication on business

Unit- 1: INTRODUCTION TO INFORMATION TECHNOLOGY

Introduction to computers, computer hardware, computer software, and computer networks and the Internet, word processing software, spreadsheet software and presentation software.

Unit-2: Information technology essential for a manager:

Databases and database management systems, program development and programming languages, computer networks, multimedia and web, network, and internet security. The practical component provides skills necessary for using advanced features of spread sheet software & database management software.

Unit-3: Process management theories:

Six sigma and business process re-engineering (BPR) that lead to BPM. Overview of the BPM concepts, BPM principles and BPM practices.

Unit-4: Usage and application of information systems:

Information systems in business, information technology infrastructure, information systems and their relationship with organizations, information systems for business operations, information systems for managerial decision making, information systems for strategic advantage, enterprise-wide applications, information systems building and management, and managing change.

Unit-5: Professional ethics and responsibility

Responsibilities toward customers, clients, co-workers, employees, and employers; making critical decisions, use of computers in a professional setting.

Course Outcome: After completion of this paper student will be able to -

- To know the basics of information technology
- Present and analyses the importance of information technology for managers
- Understand the process of implementation of IT on business
- Develop the Skill to apply information technology on business
- Gain Knowledge about the professional ethics and responsibility while using IT

Textbook

- ✓ Understanding Computers: Today and Tomorrow – D Morley & Charles Parker – Cengage
- ✓ Information Technology for Management: Advancing Sustainable, Profitable Business Growth - Turban, Volonino, Wood, O.P. Wali – Wiley Publication

Paper- 2.1

OCB6002: ADVANCED COST AND MANAGEMENT ACCOUNTING

Objective: To acquaint the students with the advanced concepts used in cost and management accounting, various methods involved, and tools and techniques used for costing and managerial decision making at the macro level

Unit- 1: Standard Costing & Variance Analysis:

Meaning & Objectives of Standard Costing, Types of Standards, Setting of Standards, Variance analysis – Material, Labour, Overheads, Sales and Profit Variances, Interpretation of the Variances.

Unit – II: Budgeting & Budgetary Control:

Budget, budgeting, and budgetary control; Budgeting process, Advantages and problems of Budgeting, Kinds of Budgets; ZBB, Cash Budget, Performance Budgeting.

Unit – III: Process Costing:

Meaning of Process Costing; Features of Process Costing; Process Losses and Gains Process Costing – Equivalent Units; Valuation of Work-in-progress
Methods of Accounting for Joint Products, Costing of By-products.

Unit – IV: Contract Costing:

Basics of Contract Costing – Features of Contracts, Accounting procedures, accounting treatment of costs, Surveyor's Certificate, Retention Costs, Ascertainment of Work-in-progress; Costing of Running contracts
Costing of contracts nearing completion; Cost plus contracts, Fixed cost contracts with escalation clause; Service Costing

Unit – V: Reconciliation of Cost and Financial Accounts Need for reconciliation, Reconciliation statement; Non-Integrated and Integrated Accounting system.

Activity Based Costing & Balanced Score Card, Responsibility Accounting.

Course Outcome:

- Understand the concept of standard costing and interpretation of variances
- Gain the knowledge about budgeting process and preparation of budget
- Know the concept and estimation of process costing
- Understand the procedure of contract costing
- Know how to reconcile cost and financial accounting

Textbook

- ✓ Cost and Management Accounting – Ravi M Kishore – Taxman Publications

Reference Books

- ✓ Cost and Management Accounting – Colin Drury – Cengage Learning
- ✓ Cost and Management Accounting – Mitra, Oxford University Press
- ✓ Cost and Management Accounting – M B Shukla – Himalaya Publishing House

Paper- 2.2

OCB6004: MANAGERIAL ECONOMICS

OBJECTIVE: To Build a strong theoretical foundation of the subject and develop managerial perspective to economic principle as aid for making decision under given environmental constraints.

Unit-I:

Nature and Scope of Managerial economics, Managerial Economist Role and Responsibilities, fundamental economic concepts Incremental Principle, Opportunity Cost Principle, Discounting Principle, Equi-Marginal Principle, Profit Maximization Theory.

Unit- II:

Demand Analysis, Elasticity of Demand, its Meaning and Importance, Price Elasticity, Income Elasticity, Cross Elasticity. Theory of Consumer Choice, Indifference Approach, Revealed Preference Theory. Production Function, Law of Variable Proportions, Law of Returns to Scale.

Unit-III:

Pricing Policies and Methods: Objectives of pricing policy, factors affecting on pricing policy, methods of pricing, cost plus pricing, going rate pricing, marginal cost pricing, skimming price, low penetration pricing, transfer pricing, price discrimination, international price discrimination and dumping.

Unit-IV:

Business Cycles: Nature and Phases, Theories of Business Cycles, Non-Monetary Theories and Monetary Theories of Schumpeter, Hicks, Hayek, Hawtrey and Samuelson, Keynes's saving and investment theory, measures to be taken for reducing evil effects of business cycles.

Unit-V:

Profit Management - Measurement of Profit, Concept of Risk and Uncertainty, Profit Planning and Forecasting.

Inflation: Meaning, definition, characteristics and types of inflation, effects of inflation.

Textbook

- ✓ H.L. Ahuja Managerial Economics, S. Chand Co., New Delhi.
- ✓ Dwivedi D.N., Managerial Economics – Vikas Publishing House, Delhi

Reference Books:

- ✓ Baya Michael R. Managerial Economics and Business Strategy Mc Graw Hill, New York.
- ✓ Varshney and Maheshwari, Managerial Economics-Sultan Chand and Sons, New Delhi.
- ✓ Petersen H. and W. Cris lewis Managerial Economics prentice Hall, Delhi.

- ✓ Haynes W.W. Mote and Poul, Managerial Economics Analysis and Cases Prentice Hall, Delhi.
- ✓ Chopra O.P., Managerial Economics- Tata McGraw Hill, Delhi.
- ✓ Gough J. and S.Hills Fundamentals of Managerial Economics, Macmillan London.

Paper- 2.3

OCB6006: INTERNATIONAL BUSINESS & ENVIRONMENT

OBJECTIVE: To Understand about various national and international factors that are having impact on the functioning of business.

UNIT-1

International Business- Nature, importance, and scope; Modes of entry into International Business; Framework for analyzing international business environment; Economic, Technological, Socio-cultural, Political, and legal environment; International Economic Environment-- International financial system; Institutional support to International Business-- UNO, IMF, World Bank; UNCTAD; WTO

UNIT-2

Regional Economic Co-operation and Integration between Countries; Various levels of integration between Countries; European Union, NAFTA, ASEAN, EFTA, SAARC, SAPTA, The ANDEAN community, MERCOSUR.

UNIT-3

Multinational Corporations: Conceptual Framework of MNCs; MNCs and Host and Home Country relations; International Technology Transfers – importance and types, Foreign Technology Acquisition.

UNIT-4

Foreign Exchange Markets: Determining exchange rates; Fixed and flexible exchange rate system; Participants in the Foreign exchange markets; Cash and Spot exchange market; Exchange rate quotes; Factors affecting exchange rates–spot rates, forward exchange rates, forward exchange contracts; Foreign exchange and currency futures; Exchange rate arrangement in India.

UNIT-5

Foreign Investment: Capital flows – types and theories of foreign investment – Foreign investment flows and barriers. Recent Developments in International Business: Ecological issues; Social aspects

Course Outcome: After completing this course, the student should be able to

- Define international business and describe how it differs from domestic business with respect to laws, regulations and taxation.
- Identify and describe factors and forces that affect an organization's decision to internationalize its business
- Describe and compare strategies for internationalization
- Identify and analyse challenges in working, communicating, and negotiating in a cross-cultural context

Textbooks

- ✓ Black and Sundaram: International Business Environment, PHI New Delhi.
- ✓ Cengage - Peng/Sharma – Global Business

Reference Books:

- ✓ F. Adhikari, Manabe: Global Business Management, Macmillan, New Delhi
- ✓ Bhattacharya, B: Going International Response Strategies for Indian Sector, Wheeler.
- ✓ Black and Sundaram: International Business Environment, PHI New Delhi.

Paper- 2.4

OCB6008: Dynamics of Banking & Insurance

Objective: To equip students with tools and methods of analysing aspects related to financial systems, settlement of banks and the workings of the insurance companies and its regulations.

Unit 1: Indian Banking System

Evolution of Banking, Structure, and types (Public Sector Banks in India, Private Banks, Cooperative Banks, Regional Rural Banks (RRBs), National Housing Bank (NHB), Housing and Urban Development Corporation Ltd. (HUDCO), Housing Development Finance Corporation (HDFC), Industrial Development Bank of India (IDBI), Industrial Finance Corporation of India (IFCI) Ltd, Power Finance Corporation

Unit 2: Reserve Bank of India

Organization of RBI, Objectives of RBI, Reserve Bank and Industrial Finance, Nature and Functions of Central Bank, Traditional Central Banking Functions (monetary functions), Supervisory Functions (Non-monetary Functions), Promotional Functions (Non-monetary Functions), Miscellaneous Functions, Risk Management and Central Bank

Unit 3: Payment and Settlement System

Roles of Banks (intermediations) Payment and Settlement Systems in Banks, Role of Credit/Debit Cards in Payment Systems, Credit Card Operations, Customer Rights, Core Banking Solutions or Centralized Banking Solutions (CBS), Customer Grievances Redressal under Payment System,

Unit 4: New Age Clearing and New Age Payment

Real Time Gross Settlement Systems (RTGS), RTGS vs Electronic Fund Transfer System (EFT) or National Electronics Funds Transfer System (NEFT), RTGS Operations-impact on the Financial Sector, Interbank Financial Telecommunication (SWIFT), Bank Identification Code (BIC), Swift in India

Unit 5: Insurance

Introduction, Indian Insurance Industry, Basic Terminology, How Insurance Works, Types of Insurance (Life & Non-Life), Re-Insurance, Rights & Duties on both Insurer and Insured, Role of insurance in Financial System , IRDA , Regulation and Role, Extension of insurance to Niche areas: Pension plans, Bank assurance, Lips, TPA, Micro Insurance, Insurance Inclusion, Mortality rate and theory of probabilities to the mortality Table

Course Outcome:

After completion of this paper student will be able to -

- Know the Indian banking system
- Understand the various functions of the RBI
- Understand how the settlement works in the banking system
- Learn how the clearing system works
- Gain Knowledge and Competency to understand the workings of the insurance companies

Textbook:

Banking Law & Insurance- Sonali Sharma - Singhal law publication

Paper- 2.5

OCB6012: HUMAN CAPITAL DEVELOPMENT

The Objective of this course is to help students understand the Concept of Human Capital Development and measurement of value addition to the organization.

Unit I: Introduction.

Meaning, Definition of Human Capital, Objectives, Scope, Nature of HRM, Need for HRM approach, importance of HRM. Models of HRM - Functions of HRM -Environment of HRM -Role of HR Practitioner.

Unit II: Human Resource Development (HRD).

Meaning, Definition of HRD, Features, Objectives & Significance of HRD, Scope, Need of HRD- Functions of HRD Managers-Instruments (Mechanism) of HRD -new HRD strategies -HRD future Issues.

Unit-III: Human Resource Policy & Human Resource Planning.

Meaning, features, objectives, principles & advantages of HR policies- Human resource planning-meaning objectives-need & importance of Human Resource Planning-Limitations-Guidelines for effective HRP.

Unit-IV: Training & Development of HR.

Meaning, features, objectives - Need & importance of training - its benefits- Types of Training Programmes, Training methods - Barriers to effective training-Training & Development.

Unit-V: HRM in Changing Business Environment.

Changing environment of HRM -Changing role of HRM -Workforce Diversity - its concepts, advantages, challenges & ways to improve the management of workforce diversity, Work-Life-Balance (WLB)-its concept, needs & methods of work-life-balance, Work From Home (WFH)-concept, Key points for Work From Home Policy, benefits of WFH.

Course Outcome: After Completing this course, the student should be able to

- Understand the importance of Human Capital for an organization.
- Acquire the conceptual knowledge of human resource development in an organization.
- Know the importance of Human Resource Training & Development.
- Get the knowledge about Human Resource Policies & Planning.
- Know about changing role of HRM.
- Get acquainted with WFD, WLB & WFH.

Textbooks:

- ✓ Shashi Gupta & Joshi, Human Resource Management (Text & cases), Kalyani Publishers.
- ✓ Sasmitarani Samanta & J.P Mahajan, Human Resource Management, PHI (e-Book available).

Reference Books:

- ✓ Sikha Kapoor, HRM, Taxman
- ✓ Khanka S. S.- Human Resource Management -S. Chand
- ✓ Human Resource Management, Sagun Ahuja, V. K. Global Pvt. Ltd., New Delhi

Paper- 2.6

OCB6014: RESEARCH METHODOLOGY AND BASIC ECONOMETRICS

Objective: This course aims at providing the general understanding of business research and the methods of business research. It will also help the students to understand the importance of research in social science and use of various techniques of econometrics in research and statistical problems.

Unit I: Introduction: Meaning of research; Scope of Business Research; Purpose of Research, Types of Research, Identification of research problem and formulation of hypothesis, Research Designs
Primary and Secondary Data, Design of Questionnaire, Measurement of Scale, Sampling Steps, Types, Sample Size Decision

Unit II: Hypothesis Testing: Tests concerning means and proportions; Z-test, t-test, ANOVA, Chi-square test and other Non-parametric tests- sign test, Run test, Krushkal Wallis Test.

Unit III: Regression Model:

Estimation, Assumptions of the Classical Linear Regression Model, OLS estimation Model Selection Criteria: R² and Adjusted R² criteria, Akaike's Information Criterion and Schwarz's Information Criterion. Diagnostic Testing: Multi-collinearity, Autocorrelation and Heteroscedasticity.

Unit IV: Introduction to Econometric Software (GRET/ E-Views/ R/ Stata)

Generation of data sets and data transformation; Data analysis - Graphs and Plots, Summary Statistics, Correlation Matrix, Running an OLS regression, Collinearity, Autocorrelation, Heteroscedasticity, Normality of residuals

Unit V: Report Preparation: Meaning, types and layout of research report; Steps in report writing; Citations, Bibliography and Annexure in report; JEL Classification.

Learning Outcomes: Students would be able to:

- Understand the nature and scope of scientific research.
- Know the significance of collection of data and sampling of data.
- Understand the regression model and its usefulness.
- Learn the detection of errors and estimation techniques using panel data.
- To acquainted with available statistical software.

Textbooks:

- ✓ New Age Publishers Pvt Ltd - Kothari C.R. Research Methodology
- ✓ Mishra Business Research Methods, Oxford University Press.
- ✓ Basic Econometrics- Damodar N. Gujarati, Dawn C Porter, Sangeetha Gunasekar, McGraw Hill

Reference Books:

- ✓ Business Research methods, S.C. Agarwal, V.K. Global Pub. Pvt. Ltd., New Delhi.
- ✓ Upagade & Shende Research Methodology S. Chand
- ✓ A.K.P.C. Swain, Business Research methods and Project work, Kalyani Publishers, New Delhi
- ✓ Dangi, H.K. Business Research methods, Cengage Learning

✓ Chawla Deepak Research Methodology Vikash Publication

Semester III

Paper- 3.1

OCB7001: Forensic Accounting and Auditing

To expose students with definitive and comprehensive accountancy covering Forensic Accounting Auditing for companies as well as distinct types of organizations.

CONTENTS:

Unit- 1: Fundamentals for Forensic Accounting

What is Forensic Accounting, Minimum requirements for becoming a Forensic Accountant, Role of the forensic accountant; differences between forensic accounting and auditing; transaction cycles and internal controls.

Unit- 2: The Auditing Environment

The audit process (including methods and techniques used and types of audit reports issued); the auditor's responsibility to detect fraud; Sarbanes-Oxley Act (including overall objectives, major provisions, compliance with the act, and evaluation of effectiveness).

Unit- 3: Forensic Accounting Tools and Techniques

Key concepts of forensic science applicable to accounting; key concepts of information security management systems; the effect of suspected fraud on the audit of financial statements or a forensic investigation; common indicators of fraud; common analytical procedures; sources of forensic evidence; investigative techniques used by forensic accountants; interview and interrogation techniques.

Unit- 4: Financial Statement Fraud

Financial statement fraud schemes; characteristics of financial statement fraud; motives of management to commit financial statement fraud; insider trading; prevention of financial statement fraud; red flags of financial statement fraud, Minimize the risk of business and individual

Unit- 5: Forensic Accounting Methods and Skills of Forensic Accountant

Indirect and Direct methods, Forensic Accounting for a Divorce: How forensic accountants help you, Real Estate fraud, how does a trial work? The skills forensic accountant needs.

Course Outcome: After completion of this paper student will be able to-

- Develop Insights about the Forensic Accounting
- Present and Analyze audit environment
- Understand various forensic accounting tools and technique
- Gain knowledge about the frauds done by corporates
- To understand the methods of forensic accounting

Textbook

- ✓ Forensic Accounting: What the World's Best Forensic Accountants Know - Greg shields - CreateSpace Independent Publishing Platform

Reference Books

- ✓ Students' Handbook on Forensic Accounting - Apurva Joshi

Paper- 3.2

OCB7003: Quantitative Technique and Operational Research

To Understand about various national and international factors that are having impact on the functioning of business.

UNIT-1 Network Analysis - Shortest path problem- PERT / CPM - Basic concepts - Preparation of Network diagram - Computation of Critical Path - PERT cost - Applications of PERT - Limitations of PERT / CPM.

UNIT-2 Transportation problem - General structure - Methods for finding critical and optimal solutions (initial feasibility solution and optimization) - Degeneracy - Transportation problems

UNIT-3 Assignment Problems – Concept - Algorithm – Hungarian method- Simple problems

UNIT-4 Linear Programming - Formulation of LP Problem - Graphical Method, Simplex Method - Dual of a LP.

UNIT-5 Waiting Line Theory - Meaning, concepts used, elements of Queuing system - Basic Structure of Queuing models - Single channel, multi-channel queuing models - Limitations of queuing theory.

Course Outcome: After completing this course, the student should be able to

- Understand the basics of network analysis and its implications in business
- Understand the general structure of transportation problem
- To know the solutions and strategies for solving assignment problems
- Understand the method of solving linear programming
- To know the structure of queuing models

Textbooks

- ✓ Operations Research – P K Gupta – S Chand
- ✓ C R Kothari - An Introduction to Operations Research - Vikas Publishing, India.

Reference Books:

- ✓ Herbert, M.&Wright G.P.-Operations Research Techniques for Management-Prentice Hall, India.
- ✓ Panneerselvam, R. - Operations Research – Prentice Hall of India.
- ✓ Andrew Vazsonyi & Herbert Spier - Quantitative Analysis for Business - Prentice Hall, India

Paper- 3.3
OCB7081: SUMMER INTERNSHIP AND PROJECT

Specialization (Accounting and Finance)

Paper- 3.4.1 OCB7101: IFRS and Ind AS

The objective of this paper is to let the students know the fundamentals of accounting standards and corporate reporting practices. This paper will help the students to gain the knowledge on selective accounting standard.

CONTENTS:

Unit I: Introduction to Indian Accounting Standards- Introduction, Applicability, Carve- Outs and Carve- Ins, Framework for the preparation and presentation of Financial Statements in accordance with Indian Accounting Standards. First-time adoption of Indian Accounting Standards (Ind AS - 101), Fair value measurement (Ind AS - 113)

Unit II: Presentation of Financial Statements (Ind AS -1), Separate financial statements (Ind AS - 27), Interim financial reporting (Ind AS - 34), Intangibles (Ind AS 38)

Unit III: Inventories (Ind AS - 2), Statement of Cash Flows (Ind AS - 7), Property, plant, and equipment (Ind AS - 16)

Unit IV: Leases (Ind AS - 116), Government Grants (Ind AS 20), Borrowing Costs (Ind AS 23), EPS(Ind AS 33)

Unit V: Business Combinations (Ind AS 103), Associates & Joint Ventures (Ind AS 28), Consolidated Financial Statements (Ind AS 110), Revenue from Contracts (Ind AS 115)

Outcomes:

- Understand the concepts of Indian Accounting Standards along with the difference between IndAS and IFRS.
- Know the contents of Annual Report and reporting
- Prepare statement of Cash flow statement and to have broad idea about PPP and inventory valuation.
- Know basic ideas about Govt. grants, borrowing costs, leases
- Understand concepts of corporate restructuring.

Textbook

- Students' Guide to Ind ASs (Converged IFRSs) – Dr. D. S. Rawat –Taxmann

Paper- 3.4.2
OCB7103: GST and Customs Law

To impart knowledge of principles and provisions of GST and Customs Law, the important legislation dealing with indirect tax system in India; and to enable students to apply the same practically.

CONTENTS:

Unit- 1: Introduction

Constitutional Framework of Indirect taxes before GST; Meaning, variants and methods; Major defects in the structure of indirect taxes existing prior to GST; Rationale for GST; Structure of GST; GST Council; GST Network; State compensation mechanism.

Unit- 2: Levy & collection of GST

Taxable Event – “Supply” of Goods & Services; Place of Supply; Intra – state and Inter State; Time of Supply; Valuation; Exemption from GST; Classification of Goods & Services; Composite & Mixed Supply.

Unit- 3: Input Tax Credit

Eligibility of ITC; Apportionment of Credit and blocked credits; Recovery of excess credits; Transfer of ITC; Payment of taxes; Refunds; Doctrine of Unjust enrichment; TDS; TCS; Reverse charge mechanism; Job work

Unit- 4: Procedures & Special Provisions under GST

Registration; Tax Invoice; Credit & Debit notes; Returns; Audit; Assessments; Taxability of e-Commerce; Anti-profiteering; Avoidance of Dual control; e-waybills; Zero-rated supply; Offences & Penalties; Appeals

Unit- 5: Customs Law

Basic concepts; Territorial waters; Types of custom duties; valuation; baggage rules; exemptions.

Note: In case of any subsequent notifications/ amendments regarding GST or Customs Law by the Government, the syllabus would be updated accordingly.

Course Outcome:

After completion of this paper student will be able to -

- Connect with the genesis of Goods and Services tax and comprehend the composition and working of GST Council
- Understand the meaning of Supply under GST Law, differentiate between inter and intra state supply, and compute the value of supply
- Comprehend the utilization of ITC, reverse charge mechanism and know the process of claiming refunds.
- Understand the provisions of registration under GST, avoidance of dual control, e-waybills, and penalty.
- Know the basic concepts of Customs Act and compute the assessable value for charging different custom duty.

Textbooks:

- GST & Customs Law (University Edition) – CA (Dr.) K. M. Bansal –Taxman

Paper- 3.4.3

OCB7105: International Finance

Objective: This course provides students with a broad understanding of international monetary systems and banking with a specific focus on the effects of financial markets and trade balances on international trade and the analysis of regions, countries, and markets for international trade. Students are encouraged to analyse and consider international financial management decisions and are taught tools and methodologies to employ as global managers to mitigate risk and take advantage of opportunities in the marketplace.

Unit 1: International Financial Environment, Global Economy - A Historical Perspective, Financial Globalization- goals of International Financial Management, The Openness of Indian Economy & Indicators of Openness of Indian Economy.

Unit 2: Balance of Payment and International Linkages: International Financial Transactions: Balance of Payments: Meaning & Structure Balance of payments and its components; BOP Accounting, BOP trends in major countries, Coping with current account deficit, Capital Account Convertibility – pros and cons.

Unit 3: International Financial Markets and Instruments: International money market – Euro Currency Market, Euro credits, Forward Rate Agreements, Euro Notes – International Bond market Credit Rating and indices of international bond market – Types of instruments – International equity markets: Market structure, trading in international equities, cross listing of equities, GDRs, ADRs, IDRs, Global registered shares, international equity market benchmark, factors affecting in international equity market.

Unit 4: Foreign Exchange markets: Foreign Exchange Market: origin of the concept of foreign exchange, the difference between fixed and floating rates. Foreign exchange transactions and the derivatives instruments traded in foreign exchange market such as forwards, futures, swaps, and options. Functions and structure of Forex market, Forex market participants, foreign exchange spot rates.

Unit 5: Foreign Exchange and Management: Foreign Exchange rate determinants –Interest rate parity, Purchasing power parity and the International Fisher effect. Exchange rate movements, factors that influence exchange rates, movements in cross exchange rates, concepts of international arbitrage, interest rate parity, and purchasing power parity and the International Fisher effect. Management of Transaction exposure, Cross hedging minor currency exposure, Determinants of economic exposure.

Course Outcome: After completion of this paper student will be able to -

- An understanding of the foundations of international financial management
- An understanding of the foreign exchange market and exchange rate determination
- A realization of the risks involved in international financial management and how to mitigate them
- An understanding of world financial markets and the institutions involved
- An understanding of tools and tactics used in the financial management of a multinational firm

Textbooks:

1. International Finance – V.A. Avadhani – Himalaya Publishers
2. International Finance: Theory and Policy - Paul R. Krugman, Maurice Obstfeld, Marc Melitz - Global Edition, Pearson

Reference Books:

- Cheol S. Eun, Bruce G. Resnick, International Finance Management, Mc Graw Hill, 5th edition, 2009.
- Keith Pilbeam, International Finance, Palgrave Macmillan, 3rd edition.
- Thomas J. P'brien, International Finance – corporate decision in global markets, 2nd edition
- Buckley, Adrian: Multinational Finance, Prentice Hall, New Delhi, 5th Edition.
- Shapiro, Alan. C: Multinational Financial Management, Prentice Hall, New Delhi. 2006, 8th edition

Specialization (International Business and Marketing)

Paper- 3.5.1

OCB7201: Consumer Behavior

Objectives: The basic objective of this course is to develop and understanding about many aspects of consumer behavior and its applications in marketing.

Unit 1: Introduction to Consumer Behavior.

Consumer Behavior and marketing Strategy, Methods of consumer research, Applications of consumer behavior knowledge in marketing. Contributing disciplines and area like psychology, social psychology, economics, anthropology etc. Diversity of consumers and their behaviors.

Unit2: Consumer needs, theories of Motivation and their applications. Process theories and content theories. Personality and self - concept. Theories of personality. Trait theory and measurement. Motivational Research. Perception. Thresholds of perception, Subliminal perception, Perceptual process dynamics. Positioning methods and measurement.

Unit 3: Learning theories and their applications, Brand loyalty, Brand extensions. Conditioning theories, Cognitive learning theories. Attitudes and Attitude Change; Concept and measurement of attitudes. Strategies of attitude change, Attribution theory and Cognitive dissonance. Persuasion and persuasibility.

Unit4: Self Concept. Concept of Multiple Selves. Development of the self. Image Congruence assumptions. Social Comparison theory. Self-esteem. Body image and body esteem. Fashion, Cosmetics and Conspicuous consumption. Psychographics and Lifestyle; Reference Group Influence; Theory of reference group and applications. Endorsements and reference group influence.

Unit5: Family, family life cycle and decision - making. Social Class. The concept and measurement. Mobility among social classes. Prestige products and status. Diffusion of Innovation and Opinion Leadership. Marketing, consumer behavior and society. Consumption and Persuasion-Issues of manipulation and long- term impacts on society and children. Consumer materialism. Consumer behavior knowledge for public policy.

Course Outcome: After completion of this paper student will be able to-

- Understand the basics of consumer behavior
- Know the needs of the consumer
- Learn various theories developed to understand consumer behavior
- Understand the self-concept of consumer behavior
- Gain Knowledge about the family lifecycle.

Textbooks:

- Consumer Behavior - Schiffman, L G and Kanuk, L – Pearson

Suggested Readings

1. Assael, H. Consumer Behaviour and marketing Action, Ohio, Southwestern,1995
2. Engle, J F etc. Consumer Behaviour, Chicago, Dryden Press, 1993 Electives (Marketing)
3. Howard, John A etc. Consumer Behaviour in marketing Englewood Cliffs, New Jersey, Prentice Hall
4. Hawkins, D I etc. Consumer Behaviour Implications for Marketing Strategy. Texas, Business,1995
5. Mowen, John C. Consumer Behaviour, New York, MacMillan,1993

Paper- 3.5.2
OCB7203: International Supply Chain Management

Objectives: To provide an understanding of the supply chain management system and distribution system

Unit-1 Introduction: Basic concepts & philosophy of SCM, essential features, decision phases –process view, supply chain framework, key issues in SCM and benefits.

Unit 2 Designing the supply chain network: Designing distribution network, role of distribution, factors influencing distribution, design options, distribution networks in practice, network designing the supply chain, factors affecting the network design decisions. Designing and Planning Transportation Networks, role of transportation, modes and their performance, transportation Infrastructure and policies

Unit-3 Inventory Management: Concept, various costs associated with inventory, EOQ, buffer stock, lead time reduction, reorder point / re-order level fixation, ABC analysis, SDE/VED Analysis.

Unit-4 Purchasing and vendor management: Centralized and decentralized purchasing, function of purchase department and purchase policies, vendor rating/ evaluation, single vendor concept, management of stores, account for materials, just in time & Kanban systems of inventory management.

Unit-5 Logistics Management: Logistics of part of SCM, logistics costs, different models, logistics, sub-systems, inbound and out bound logistics bullwhip effects in logistics, distribution, and warehousing management.

Course Outcome:

After completion of this paper student will be able to -

- Develop Insights about the supply chain management system
- Know the designing of supply chain management
- Understand the basics of the inventory management system
- Develop the Skill of purchasing and vendor management
- Gain Knowledge of logistic management

Textbooks:

- ✓ Supply Chain Management: A Logistics Perspective- Coyle, John J., Cengage Learning
- ✓ Supply Chain Management – Strategy, Planning, And Operation- Sunil Chopra, Pearson

Paper- 3.5.3

OCB7205: Global Business Ethics

Objectives: To provide an understanding of the global business ethical practices and developing skills of identification and analysis of ethical dilemmas on a workplace and managing ethics in organizations.

Unit 1: Introduction to Global Business Ethics:

Global Ethics- Meaning , Definition of Business Ethics, Ethical performance, Types of Ethics, Sources of Ethics, Importance and Scope of Ethics, Factors influencing Business Ethics, Objectives of Business Ethics, Morality and Ethics.

Unit 2: Global Values, Norms, Beliefs, and Standards

Ethical Codes, Managing Ethics, Ethical Activities, Ethical Dilemmas, Whistle Blowing, Ethical Organisation, Ethical Issues that arise for Managers, Kohlberg's Model, Carol Gilligan's Model.

Unit 3: Global Ethical Practices in Business Management

Application in Marketing and Advertising, Application in Accounting & Finance-Tax Evasion, Lack of Transparency, Preparing False Financial Statement, Speculation and Insider Trading. Application in HRM - Compensation, Nomination and Work Place Harassment of Employees.

Unit 4: Societal and Ecological Global Business Ethics

Social Responsibility of Business, the Ecological Responsibility of Business, Developing Sustainable and Accountable Business, Responsible Business in a Global World, Ethics in the Manager's Work and in Corporate Governance

Unit 5: Globalization of CSR and CSR Audit

Features of CSR of multinational corporations, theory and practice of CSR. Global environmental, social, economic, political and other problems. Criteria for evaluation of efficiency of CSR to multinational corporations, Basic initiatives in the field of CSR and sustainable development. Corporate CSR reports. Social Audit reports.

Course Outcomes: After taking the course of Global Business Ethics students should will able to :

- Define, explain and illustrate the theoretical foundations of Global Business Ethics
- Understand the various ethical codes, activities, ethical problems and issues faced in global business
- Learn the various unethical practices on accounting, finance and HRM and how to solve these issues
- Reflect on and critically examine the societal and ecological issues in the global workplace
- Understand the CSR international standards, how to prepare CSR Reports and conduct social audit of CSR activities.

Text Books

- ✓ A.C. Fernando, Business Ethics: An Indian Perspective. New Delhi: Pearson Education 2009
- ✓ CSV Murthy, Business Ethics (Text and Cases), Published by Himalya Publishing House

Suggested Readings

- ✓ Marianne M. Jennings, Cases in Business Ethics, Published by Cengage Learning
- ✓ John R. Beatright, Ethics and the conduct of business, Published by Pearson Education
- ✓ Ananda Das Gupta (2014): Business Ethics: Texts and Cases from the Indian Perspective, Springer, New Delhi
- ✓ Anderson, E. (1993): Value in Ethics and Economics, Cambridge, Mass. & London, Harvard University Press.
- ✓ Raj Agrawal and P.S. Bajaj (2008): Business Ethics: An Indian Perspective, Wiley.

Specialization (Leadership and Human Resources)

Paper- 3.6.1

OCB7301: Human Resource Planning and Development

Objective: The objective of this course is to acquaint the students with the manpower planning and development of the human resources in an organisation

UNIT-1: Human Resources Planning (HRP): Meaning, Definition, Need, Objectives, Levels of HRP- Benefits of HRP, Limitations of HRP, Strategic Role of HRP, Suggestions/Guidelines for making HRP effective, Recent trends in HRP

UNIT 2: Retention, Separation and Re-employment: Retention Management, Need of retention, Retention management strategies, Failure of Retention, Separation-Concept, Types of Separations- Natural Separations, Employee initiated separations, Employer initiated Separation- Voluntary Retirement Scheme (VRS), Reasons for VRS offered by employers & accepted by employees.

Retrenchment Concept, Re-employment Concept-Re-employment of retired employees, Re-employment of retrenched employees.

UNIT -3: Human Resource Information System (HRIS): Meaning, Definition Development of HRIS, Need and objectives of HRIS, Functions of HRIS, advantages and shortcomings of HRIS, Computerized Human Resource Information System, Critical Analysis of Limitations of HRIS

UNIT 4: Ethical Issues in Human Resource Management: Meaning of Ethics, Ethical issues in employment, Sources of business ethics, importance of business ethics, Ethical Principles for HR manager, HR ethical issues-Unethical situations- Techniques for Managing Ethics, Difficulties in Ethical Decision Making, ethical issues in HRM in Multinational corporations.

UNIT 5: Contemporary Issues in HR & HR in New Millennium: Employers Brand-meaning & need, Right Sizing workforce-concept, Need of right sizing, Work-Life -Balance (WLB)-concept & need, Work From Home (WFH)concept & Benefits, Economic, Political and Social challenges in HR, Top critical issues in HR.

Course outcome: After completion of this course of this paper students will be able to:

- Understand the HRP in detail
- Know the system of retention, separation and re- employment
- Understand HRIS in detail
- Learn ethical issues in HR
- Anticipate HR in new millennium.
- Get information about contemporary issues in HR& HR in New millennium

Textbook

Essentials of Human Resource Management and Industrial Relations by P Subba Rao (Himalaya)

Reference books

- ❖ Human Resource Management by Shashi K Gupta and Rosy Joshi (Kalyani publishers)
- ❖ Human Resource Management by Shikha Kapoor (Taxmann publishing private limited)
- ❖ Human Resource Management by S.S. Khanka (S Chand Publishing)

Paper- 3.7.1

OCB7401: Bank Management and FinTech

Objectives: Banks today are primarily technology companies, working in the “money business.” This module introduces the various dimensions of the contemporary issues banking COOs/CIOs/CTOs facing: how the next generation IT operating model of a bank should look like in terms of hardware infrastructure, application and data landscape, organization, and business – IT interface, key IT processes, as well as the major challenges arising from the technology native FinTech world.

Unit 1: Introduction to Fintech

Meaning and hype of Fintech, FinTech Hubs, The History of Fintech

Unit 2: Technology:

Block chain, Wearables and Other, Big Data and Artificial Intelligence,

Unit 3: Fintech for Managing Capital:

Allocation of Capital and Insurance, Wealth Tech overview, Digital Investment options and platforms, Algorithmic Trading, AI, and ML based Robo-Advisory

Unit 4: Portfolio management:

Digital brokerage, Crowdfunding, Customer verification and KYC

Unit 5: Pay Tech-overview

RTGS, NEFT, ECS, Cards, PPIs, Wallets, Payment Banks, Payment gateways, UPI/ India Stack, BHIM, Other NPCI products - IMPS, RuPay, NFS, NACH, Bharat Bill pay etc., Ripple, IoT in Payments, PayU Case Study discussion

Course Outcome:

- Students will become familiar with the key components of key components of banking IT hardware and software infrastructure, big data/advanced analytics use cases and IT governance and organization challenges.
- Furthermore, they gain insight in which way and in which part of the value chain the FinTech's are challenging the incumbents, and/or how they can cooperate with established banks.

Textbooks:

1. Fintech: The New DNA of Financial Services, Pranay Gupta, and Mandy Tham, DEG press

Reference books:

1. FinTech: Technology Driving Disruption in Financial Services Industry, Paraga Y Arjun, CRC Press

Paper- 3.7.2

OCB7403: Investment and Risk Management

Objective: To equip students with tools and methods of analysing aspects related to international financial systems, Balance of Payments, and International financial markets, besides making them aware of mitigating forex risk.

Unit 1: Debt Markets and Fixed Income Securities Introduction, Terminologies, Types of bonds, Govt. of India securities, State development loans, Other approved securities, Non SLR securities, Public Sector Undertakings' (PSU) Bonds, Corporate debentures, Bonds and debentures, some other aspects of fixed income securities, Bond Dynamics, Discounted cashflow, Time value of Money, Accounting, Valuation

Unit 2: Interest Rate Quotations and Market Terminology Introduction, Fixed and floating rate of interest, Simple and compound rate of interest, Yield, Premium and discount, Front end and rear end, Day count conventions

Unit 3: Treasury Management Introduction, Sources of profit for Treasury, Global Scenario, RBI Measures, Scope and functions of treasury management, Nature of Treasury Assets and Liabilities, Objectives of treasury, Organizational Structure, Integrated Treasury: Cost Centre and Profit Centre, Functions, Benefits

Unit 4: Liquidity Management Objectives, Sources and Deployment, CRR, SLR, CCIL: Netting/ Elimination of Exposures, RTGS, **Risk Analysis and Control:** Interest Rate Risk, Investment/ Trading Book, Value at Risk, Forex (Market) Risk

Unit 5: Regulations, Supervision and Compliance of Treasury Operations: RBI guidelines, **Role of Information Technology in Treasury Management:** Negotiated Dealing System, Other Trading Platforms/ Systems, Straight Through Processing (STP), Settlement, Custody and Others

Course Outcome:

After completion of this paper student will be able to -

- Develop Insights about Corporate Restructuring and Accounting for various Types of Restructuring
- Present and analyse the management of liquidity
- Understand how to analyse risk and how to control
- Develop the Skill of Preparation of Financial Statements of Banking Companies
- Gain Knowledge and Competency in treasury management.

Textbooks:

Treasury, Investment and Risk Management, Indian Institute of Banking and Insurance, Taxman

Reference Books:

End Users' Guide to Risk Management and Derivatives, Rahul Ghosh, Wiley

Paper- 3.7.3

OCB7405: International Banking and Finance

Objective: To equip students with tools and methods of analysing aspects related to international financial systems, Balance of Payments, and International financial markets, besides making them aware of mitigating foreign exchange risk.

Unit 1: International banking operations

Global trends and developments in International Banking ii) Wholesale banking, retail banking, private banking, inter-bank business iii) International financial centers offshore banking units, SEZs iv) Asset Liability Management v) Profitability of International Banking Operations vi) Investment Banking vii) Correspondent Banking

Unit 2: International Financial Institutions

IMF, IBRD, BIS, IFC, ADB, WTO

Role of IMF and World Bank in International debt crisis management

Unit 3: Treasury and Risk Mitigation

FEMA and Regulatory Framework in India

Letter of Credit mechanism and UCPDC/ URC/ URR Buyer's/ Sellers credit

Unit 4: International Corporate Finance

Fundamental principles of lending MNC, documentation and monitoring of Corporate Finance, international credit rating agencies and global capital markets, Raising resources and its deployment, ECBs/FCNRs

Unit 5: International Bond Market:

Operations - procedure and significance, Regulatory prescriptions, revising undertaking facility, Note issuance facility system and structure, Syndicated Loans, Project, and Infrastructure Finance, Corporate Treasury Management, Derivatives; Corporate application, Role of FIIs, FDIs and EXIM Bank, Commodity Exchanges.

Course Outcome:

After completion of this paper student will be able to -

- Develop Insights about international banking operation
- Know the activities of various international financial institution
- Understand the treasury and risk mitigation
- Develop the Skill to understand the international corporate finance
- Gain Knowledge about the international bond market

Textbooks:

International Banking Operations, Indian Institute of Banking and Insurance, Macmillan India

Reference Books:

International Banking Operations, Indian Institute of Banking and Insurance, Macmillan India

Semester IV

Paper- 4.1

OCB7002: STRATEGIC MANAGEMENT

Objective: The Objective of this course is to help students understand the Conceptual Framework of Business Strategies to sustain in an economy.

UNIT-1 Strategic Management: Introduction, Strategic Management, Need, scope, key features, and importance of strategic management, Role of Strategists in Decision Making, strategists at various management levels, Types of Strategies, Limitations of Strategic Management

UNIT-2 Strategy Analysis: Introduction, Strategy Analysis and its Importance, Environmental Appraisal and Scanning Techniques, Organizational Position and Strategic Advantage Profile, Strategic Management Model, Strategy Formulation and Implementation: Introduction, Strategy Formulation, Process in Strategy Formulation, Strategy Implementation and its Stages, Reasons for Strategy Failure and Methods to Overcome, Strategy Leadership and Strategy Implementation, Strategic Business Units (SBUs)

UNIT-3 Business Investment Strategies: Introduction, Business Plan and Business Venture, Business Investment Strategies; **Strategies for Multinational Corporations:** Introduction, Multinational Corporations (MNCs), Benefits of MNCs, Limitations of MNCs, Business Strategies of MNCs, Techniques Employed by MNCs to Manage Markets, MNC, TNC and Global Companies

UNIT-4 Strategic Alliances: Introduction, Strategic Alliances, Types of Strategic Alliances and Business Decisions, Problems Involved in Strategic Alliances, Recent Strategic Alliances in India

UNIT-5 Challenges in Strategic Management: Introduction, Strategic Management as an Organizational Force, Dealing with Strategic Management in Various Situations, Strategic Management Implications and Challenges; Recent Trends in Strategic Management: Introduction, Strategic Thinking, Organizational Culture and its Significance, Organizational Development and Change, Change Management, Models of Leadership Styles and its Roles, Strategic management in a new globalized economy.

Course Outcome: After completing this course, the student should be able to

- Understand the role of strategist and several types of strategies used in an organization while facing various situations.
- Understand how strategies are formulated and implemented in an organization
- Know the strategies used by the multinational companies
- Know the basics of strategic alliance
- Know the challenges faced by an organization while formulating strategies and what are the contemporary trends in strategic management

Textbooks:

- ✓ Management Policy & Strategic Management – R. M. Shrivastava, Himalaya Publishing House, Mumbai.
- ✓ Strategic Planning: Formulation of Corporate strategy–V.S. Ramaswamy, S. Nama Kumari - Macmillan Publishing House

Reference Books:

- ✓ Business Policy –Azhar Kazmi –S. Chand & Co. New Delhi
- ✓ Strategic Management: Concepts & Cases – Upendra Kachru, Excel Books.

Paper- 4.2

OCB7004: Business Analytics

OBJECTIVE: To understand principles of Business Analytics at conceptual level, application areas for implementing Business Analytics, and develop skills to design Business Analytics projects

Unit- 1: Business Analytics (BA): Definition, concept and need for Business Analytics, Case studies BA

Basics: Data, information and knowledge, Role of Mathematical models

Unit – II: Business Analytics at the strategic level: Strategy and BA, Link between strategy and Business Analytics, BA supporting strategy at functional level, dialogue between strategy and BA functions, information as strategic resource

Unit – III: Business Analytics at Data Warehouse Level: Designing physical database, Deploying, and supporting DW/BA system

Unit – IV: Business Analytics Architectures: Cycle of Business Analytics, Development of Business Analytics System, spread sheets, concept of dashboard, OLAP, SOA, decision engineering.

Unit – V: BA Applications in different domains- CRM, HR, and Production

Course Outcome: After completion of this paper student will be able to -

- Develop Insights about Business Analytics
- Present and understand the importance of Business Analytics at strategic level
- Understand the use of Business Analytics at data warehouse level
- Develop the Skill to know the Business Analytics architecture
- Gain Knowledge and Competency in application of Business Analytics in different domains

Textbook

- Business Analytics: Data Analysis & Decision making – Albright & Winston - Cengage
- Decision Support and Business Intelligence Systems- Turban, Sharda, Dalen, Pearson

Reference Books

- Business Intelligence Success Factors Tools for aligning your business in the global economy by Olivia Parr Ruud, John Wiley, and sons, 2009
- The Profit impact of Business Intelligence by Steve Williams and Nancy Williams, Morgan Kauffman Publishers/ Elsevier, 2007

Paper- 4.3

OCB7082: Dissertation

Specialization (Accounting and Finance)

Paper- 4.4.1

OCB7102: International Accounting & Corporate Reporting Practices

Objective: To expose students to the prevailing International Accounting Systems and increase the employability of students in MNCs.

Unit 1: International Dimensions of Accounting

Introduction, Definition, Importance, Scope of international Accounting, Status of International Accounting Education, Internationalization of the Accounting Profession- Introduction, The Accounting Profession in Selected Countries, Internationalization of the Profession, International Financial Reporting System (IFRS)-Salient Features, Need, Provisions, Applications in India, USA, UK, and other Countries

Unit 2: International Accounting Standards Committee

Origins & Operations, Achievements, Current Issues, The Standards, Components and Structure of Financial Statements, Balance sheet items, Income Statement Items, Consolidated Financial Statements, cash flow Statement, Requirements relating to Enterprises.

Unit 3: Comparative Analysis of Major Accounting Issues

Legal basis of accounting regulation, Existence of a Conceptual Framework, Additional components of Financial Statements, General Approaches Asset Valuation, Internally Generated intangibles & Research & Development, Goodwill, Tangible Fixed Assets, Investments, Current assets, leases, Provisions, Deferred taxes

Unit 4: Accounting Differences and Financial Statement Analysis

Presentation of Financial Statements, Methods of Financing, Main problems in Financial Statement Analysis, Scope of Consolidation, Revaluation of Assets, Depreciation and Provisions, Leasing Accounting for goodwill, Deferred Taxation, Capitalized Expenses, Transactions in Foreign Currencies, Extraordinary and Exceptional items, Changes in Accounting Principles or Generally Accepted Accounting Practices (GAAP) India-USA-UK-Germany-France-Japan

Unit 5: Sustainability Reporting and other Reporting Practices

Concept of Triple Bottom Line Reporting, Global Reporting Initiative (GRI), Integrated Reporting, Business Responsibility Reporting, Value Added Statements, Management discussion and analysis, External Reporting under capital market regulations.

Course Outcomes: After completion of this paper student will be able to -

- Develop Insights about the different dimensions of the international accounting
- Understand the operations of International Accounting Standard Committee
- Know the major accounting issues
- Gain Knowledge about the accounting difference and financial statement analysis
- Develop understanding of contemporary issues in field of corporate reporting practices.

Textbooks:

1. Prentice Hall - Mahapatra Das, AK – International Accounting; & The World Press - Bhabatosh Banerjee – Regulation of Corporate Accounting & Reporting in India

Reference Books:

1. International Accounting-Peter Walton, International Thomson Business press.
2. International accounting a user perspective-Saudagaran, Shahorkh.M, Cengage learning India
3. Comparative international accounting -Nobes Christopher & Parker Robert, Research Education Asia
4. International Accounting, Mohapatra Das.A.K., Prentic Hall of India, New Delhi.

Paper- 4.4.2
OCB7104: Corporate Tax Planning

Objective: To provide a conceptual idea about the various provisions of tax planning related to corporate sector and their impact on decision-making in this context.

Unit-I: Corporate Tax in India–Concept of Tax planning, Tax management, Tax avoidance, Tax evasion, Assessment year and Financial Year; Residential status of corporate and its incidence of tax, clubbing, Tax liability and minimum alternate tax, Tax on distributed profits

Unit-II: Carry forward and set-off of losses and unabsorbed depreciation (head wise); Carry forward and set off of losses in case of certain companies; Deductions available to corporate assesses; Tax on distributed profits; Units of Mutual funds.

Unit-III: Tax Planning with reference to Depreciation, Capital Gain and Scientific Research

Tax planning with reference to setting up of a new business; taxation issues of start-ups; Location of Business, nature of business, form of organisation; Tax panning with reference to financial management decision – Capital structure, dividend, and bonus shares; Tax planning wrt sale of scientific research assets.

Unit-IV: Tax planning with reference to specific management decisions; Make or buy; own or lease; repair or replace; Tax planning with reference to employees' remuneration; Tax planning with reference to receipt of insurance compensation; Tax planning with reference to distribution of assets at the time of liquidation.

Unit-V: Tax planning with reference to business restructuring: - Amalgamation, Demerger, Slump sale, Conversion of sole proprietary concern/partnership firm into company, Conversion of company into LLP, Transfer of assets between holding and subsidiary companies; Corporate Tax returns–Assessment, Return Filing, Penal provision, Double taxation Relief.

Learning outcome: After completing the course, the student shall be able to:

- differentiate between various tax planning concepts and understand the procedure of assessment of corporate assesses.

- devise strategies for tax planning in respect of a new business, understand the specific tax issues for start-ups, and comprehend the Income Tax provisions relevant for financial management decisions.
- Know the tax factors relevant for managerial decisions and to understand how to develop pay packages for employees.
- understand tax planning with reference to business restructuring.

Textbooks:

1. Corporate Tax Planning by V.K. Singhania (TAXMAN PUBLICATION).
2. Income Tax Law by V.K. Puri (Jain Books Agency Publication)

Reference books:

1. Income Tax Law by Chaturvedi & Pithisaria (Wadhwa Publication).
2. Law of Income Tax by Sampath Iyengar (Bharat Publication).

Paper- 4.4.3
OCB7106: Investment Management and Derivatives

Objectives: To equip students with various tools and techniques for analyzing risk & return involved in investment management and the mechanism of the financial derivatives that surrounds the business world.

Unit1: Introduction to Risk and Investment Management:

Investment process, Types of investments, Investment avenues in India, The asset allocation process, The global market investment decision, Securities markets in India. The Concept of Risk, Risk Vs. Uncertainty, Types of risks, Risk management process.

Unit2: Introduction to Portfolio Management:

Risk and Return Analysis, Asset Pricing Models, Multifactor Models of Risk and Return, Efficient Capital Markets.

Unit3: EIC Framework & Bond Valuation:

Fundamental Analysis, Technical Analysis, Volume & Price Trends, Tools of Analysis, Bond Valuation Techniques, Valuation of Convertibles & Warrants, Bond Management Strategies.

Unit 4: Derivative Markets & Instruments:

Origin & Development of Derivative Markets, Important Concept in Financial & Derivative markets, Types of Derivative Instruments, Role of Derivative Markets, Clearing & Settlement, Market participants, Regulations of Derivative Markets in India, Criticism of Derivative markets.

Unit 5: Options Pricing Models:

Principles of Option Pricing, The Binomial Model, The Black-Scholes-Merton Model

Course Outcome:

After completion of this subject the student will be able to -

- Understand the concept of risk & investment management
- Analyze the risk & return involved in portfolio management.
- Understand the conceptual framework of EIC & Bond valuation techniques.
- know the derivative markets and its instruments.
- Compute the Option price using various popular models.

Textbooks:

- 1PHI - SL Gupta – Financial Derivatives
2. Patwari D.C and Anshul Bhargava, Options and Futures., Jaico Books.

Reference Books:

1. Baghri and vora, Options and Futures, Tata McGraw Hill
2. Strong, Derivatives, Thomson publishing.

Specialization (International Business and Marketing)

Paper- 4.5.1

OCB7202: Customer Relationship Management

Objectives: To understand the concepts and principles of CRM and management of customer relationship.

Unit 1 Introduction to CRM

CRM concepts - Acquiring customers, - Customer loyalty and optimizing customer relationships, CRM success factors, the three levels of Service/ Sales Profiling, Service Level Agreements (SLAs), creating and managing effective SLAs.

Unit 2 CRM in Marketing

One-to-one Relationship Marketing - Cross Selling & Up Selling, Customer Retention, Behaviour Prediction - Customer Profitability & Value Modelling, Channel Optimization Event-based marketing, CRM and Customer Service, The Call Centre, Call Scripting Customer Satisfaction Measurement.

Unit 3 Sales Force Automation

Sales Process, Activity, Contact- Lead and Knowledge Management Field Force Automation. CRM links in e-Business - E-Commerce and Customer Relationships on the Internet - Enterprise Resource Planning (ERP), Supply Chain Management (SCM), Supplier Relationship Management (SRM), Partner relationship Management (PRM).

Unit 4 Analytical CRM

Managing and sharing customer data - Customer information databases Ethics and legalities of data use - Data Warehousing and Data Mining Concepts Data Analysis Market Basket Analysis (MBA), Click stream Analysis, Personalization and Collaborative Filtering.

Unit 5 CRM Implementation

Defining success factors, preparing a business plan requirement, justification and processes, Choosing CRM tools, defining functionalities, Home grown versus out-sourced approaches, managing customer relationships conflict, complacency, Resetting the CRM strategy. Selling CRM internally, CRM development Team, Scoping and prioritizing Development and delivery measurement.

Course Outcome: After completion of this paper student will be able to -

- Understand the concept of the CRM
- Know the importance of the CRM in Marketing
- Learn how to manage and share customer data
- Develop the Skill to implement CRM in a business

Textbooks:

1. Customer Relationship Management – Mallika Srivastava – Vikas Publishers
2. V. Kumar & Werner J., Customer Relationship Management, Willey India

Reference Books:

1. Kaushik Mukherjee, Customer Relationship Management- Kaushik Mukherjee, Prentice Hall of India
2. Jagdish Seth, Et Al, Customer Relationship Management
3. Customer Relationship Management - S. Shanmugasundaram, Prentice Hall of India Private Limited

Paper- 4.5.2

OCB7204: International Marketing

Objective: The objective of this course is to acquaint the students with the environment, principles, and strategies of and trends in international marketing and related aspects.

Unit 1 Introduction to international business. Why goes international? Special problems/features of international marketing vis-a-vis domestic marketing; internationalization stages and international marketing orientations. International business environment - economic environment; political and legal environment; demographic and cultural environment; natural environment; international trading environment.

Unit2 International marketing research; market profiling analysis and selection. Market entry and operating strategies - exporting; licensing; contract manufacturing; foreign assembly, foreign production; joint ventures; production in free areas; third country location; countertrade; strategic alliance.

Unit 3 International market segmentation and market coverage strategies - differentiated marketing; undifferentiated marketing; concentrated marketing; niche marketing. Product strategies; international marketing and PLC; pricing strategies; promotion strategies; distribution strategies. Trade financing and risk insurance.

Unit4 International marketing organisation – export department; subsidiary; foreign branches/offices global organisation. Multinational corporations; foreign direct investment.

Unit 5 Foreign trade strategy of India - Exim policy, export promotion measures Analysis of foreign trade of India. Major problems of India are export sector. Trends, problems, and prospects of globalization of Indian business.

Course Outcome: After completion of this paper student will be able to -

- Develop Insights about the need of international market in present scenario
- Present and analyse various situation of market
- Understand international market situation and segmentation
- Learn the importance of the international marketing organisation
- Gain Knowledge about the foreign trade strategy

Textbooks:

1. Keegan, Warren: Global Marketing (Prentice Hall of India)

Suggested Readings:

1. Cateora, Philip: International Marketing (Richard D Irwin)
2. Kripalani. V. H: International Marketing (Prentice Hall of India)
3. Majaro, Simon: International Marketing (George Atten & Unwin)
4. International Marketing Management (CBS Publishers and Distributors)

Paper- 4.5.3

OCB7206: International Trade Practices

Objective: This course aims at providing the general understanding of policy and practices in international trade. It will also help the students to understand the importance of international trade in Indian economic condition.

Unit-I : Introduction : Concept, Features and Importance of international Trade; Types, Advantages and Limitations of international Trade; international Trade Vs. Home Trade; Problems Involved in international Trade; Tariff and Non-Tariff Barriers; Trade Agreements; Important Classical and Modern Trade Theories.

Unit-II : international Exchange Management : Concept and Importance of international Exchange; Determination of international Exchange Rate-its Theories; international Exchange Market-Functions and Means of Settlement of International Transactions; Types of international Exchange Rates; Factors Influencing international Exchange Rates; international Exchange Control; Balance of Payments-Concept, Components and Importance of Balance of Payments.

Unit-III : international Trade Procedure and Documentation : Export Trade Procedure; Import Trade Procedure; Documents Involved in Export and Import Trade; Import and Export Duties; Custom Formalities; Organisation of international Trade; Mercantile Agents in international Trade; Export and Import Houses.

Unit-IV : Credit and Financing of international Trade : Need for and Importance of Financing of international Trade; Kinds of Credit; Institutional Set-up for Financing of international Trade in India; Modes of Payment under international Trade; Risk Management in international Trade and ECGC.

Unit-V : India and International trade : Broad Features, Composition and Direction of India's international Trade; Broad Features of international Trade Policy; Organisational Set-up for Promotion of international Trade; Export Assistance and Incentives; Government Agencies in international Trade.

Learning Outcomes: After completing the course, the student shall be able to:

- Understand the Concept of international trade.
- Learn the determination of international exchange and balance of payment.
- Know the documents required in international trade
- Understand the importance of finance in international trade
- Know India's position in international trade

Specialization (Leadership and Human Resources) Paper- 4.6.1

OCB7302: Industrial Relations and Labour Law

Objective: The course enables the learners to understand and apply the important concepts of industrial relations including trade unions, discipline, and various labour enactments.

Unit 1: Industrial Relations Concept, nature and objectives of Industrial Relations; Evolution and factors influencing IR in changing Environment, Employers' Organisation; Human Resource Management and IR.

Unit 2: Trade Unions Act, 1926 Important provisions of Trade Unions Act, 1926. Objectives of Trade Union in the era of liberalization; Factors influencing the growth of Trade unions, its registration, rights, and liabilities. Emerging trends in Union Management Relations.

Unit 3: Workers' Participation in Management Concept, practices in India, Works Committees, Joint management councils; Participative Management and co-ownership; Productive Bargaining and Gain Sharing.

Unit 4: Discipline and Grievance Redressal Causes of indiscipline, Maintenance of discipline; Highlights of domestic enquiries; Principle of Natural Justice; Labour turnover; Absenteeism; Meaning of Grievance, Grievance redressal machinery in India, Grievance handling procedure.

Unit 5: Other Labour Enactments: a) The Industrial Disputes Act, 1947: Important Definitions; various Authorities, Procedure, Powers and Duties of Authorities; Strikes and Lock outs, Lay-off, Retrenchment and closure b) The Factories Act, 1948: Provisions relating to Health, Safety, Welfare facilities, working hours, Employment of young persons, Annual Leave with wages, other leaves. c) The Code on Wages, 2019: Regulation of Minimum Wages, Payment of wages, payment of bonus

Learning Outcomes: After completing the course, the learners will be able to:

- Explain the evolution and factors influencing industrial relations in changing environment;
- Evaluate the effectiveness of trade unions and factors influencing their growth;
- Examine the effectiveness of workers' participation in management;
- Evaluate the effectiveness of grievance redressal mechanism;
- Analyse industrial disputes and implementation of its legal provisions;

Text Book

- ✓ Malik, P. L. (2018). Handbook of Labour and Industrial Law. Lucknow, Uttar Pradesh: Eastern Book Company.

Reference Book

- ✓ Monappa, A., Nambudiri, R., & Selvaraj, P. (2012). Industrial Relations and Labour Laws. New Delhi: Tata McGraw Hill Education.
- ✓ Padhi, P. K. (2012). Industrial Relations and Labour Law. New Delhi: PHI Learning.
- ✓ Sharma, J. P. (2018). Simplified Approach to Labour Laws. Bhilai, Chhattisgarh: Bharat Law House.
- ✓ Srivastava, S. C. (2012). Industrial Relations and Labour Laws. New Delhi: Vikas Publishing House.
- ✓ Venkataratnam, C. S., & Dhal, M. (2017). Industrial Relations. 2nd Edition. Delhi: OUP India.

Paper – 4.6.2

OCB7304: Organizational Conflict and Change Management

Objectives- To expose students to the different concepts, theories and practices of conflicts, Conflict management and change management. To impart conflict management and change management skills and techniques to effectively manage conflicts at the work place and community. The course also provides an

overview of the processes by which organizations typically resolve disputes. Students then apply this knowledge to current organizational disputes, designing a conflict analysis and suggested resolution strategies and redesign.

Unit- I: Introduction and Conflict Management Design

Introduction: Understanding conflict, components, perspectives of conflict, types of conflict, models of conflict – Process and Structural Models, functional & dysfunctional conflict, relationship between conflict and performance in team, levels of conflict – intrapersonal, interpersonal, group & organizational conflicts, sources of conflict - intrapersonal, interpersonal, group & organizational sources. **Conflict Management Design:** Nature of conflict Management, contingency approach, conflict management process, the conflict domain, conflict trends, conflict distribution, conflict mapping and tracking.

Unit- II: Managing Conflict: Managing interpersonal and Organizational conflict

Managing Conflict: Managing interpersonal conflict: Thomas conflict resolution approach, behavioral style and conflict handling, the Cosier Schank model of conflict resolution, collaboration & conflict resolution, dealing with difficult subordinates, boss & colleagues, 1 to 1 dispute resolution. **Managing team & organization conflict:** techniques to resolve team conflict, strategies to resolve organizational conflict, effective listening and dialogue skills, humor and conflict resolution, negotiation as a tool for conflict resolution.

Unit- III: Conflict resolution and Cost; Negotiations and Negotiation Strategies

Conflict resolution and Cost: Conflict resolution models, framework model, classical ideas, new developments in conflict resolution. Environmental conflict resolution, gender and conflict resolution. Assessing the cost of workplace conflict. **Negotiations/Negotiation strategies** -Types of Negotiations, negotiation process, factors for successful negotiations, essential skills for negotiation, tricks used in negotiation process, psychological advantage of negotiations, Techniques of negotiation, issues in negotiations. **Negotiation strategies:** Strategy and tactics for distributive bargaining, strategy and tactics for integrative negotiation, negotiation strategy and planning. Finding and using negotiation power, sources of power, Ethics in negotiation. Managing difficult negotiations: Third party approaches: Third party interventions, formal intervention methods – Arbitration, Mediation and Process Consultation, Informal intervention methods, best practices in negotiation.

Unit- IV : Organizational Change:

Concept and Significance; Managing Change; Concept of Analyzing the Environment; Perspectives on Change: Contingency; Resource Dependence; Population Ecology; Implications of Change. Types of Change: Continuous or Incremental Change; Discontinuous or Radial Change; Participate Change and Directive Change; Change Levers; Levels of Change: Knowledge Changes; Attitudinal Changes; Individual Behaviour Changes and Organizational Performance Changes.

Unit- V : Implementing Change:

Steps-Assembling a Change; Management in Establishing a New Direction for the Organization; Setting up

of Change Teams; Aligning Structure; Systems and Resources; Removing road Blocks; Absorbing Changes into Organization. **HR and Technological change:** Introduction special features of new technology; organizational implications of technological change; Emerging profile HR; Employee Empowerment, Emotional Intelligence and employee productivity; Managing work stress.

Course Outcomes- On successful completion of this course, the student should be able to:

- Students will be able to understand the concept, cause, process and various levels of interpersonal and organizational conflict
- Students will be able to understand how the interpersonal and organizational conflicts are managed and they will learn the various models of managing conflict in an organization
- Students will be able to calculate the cost an organization bears due to conflict and learn the various negotiation techniques to solve organizational conflicts
- Students will be able to understand the concept, types, levels and implications of organizational change
- Students will learn about the ways of implementing the changes in the organization

Text Books Recommended-

- ✓ Rahim, M. A. (2015). Managing Conflict in Organizations. Routledge
- ✓ Pathak, H. Organizational Change, Pearson.
- ✓ Change Management And Organizational Development by Ratan Raina, SAGE Texts
- ✓ Palmer, I. Managing Organizational Change; A Multiple Perspective Approach. McGraw Hill

Reference Books-

- ✓ Prasad, L. M., Organizational Behaviour. Sultan Chand & Sons
- ✓ Senior, B., Swailes, S., & Canall, C. Organizational Change. Pearson.
- ✓ Nelson, D. L., Quick, J. C., & Khandelwal P., ORGB: A South-Asian Perspective, Cengage
- ✓ Robbins, S. P., Judge, T. A., & Vohra, N., Organizational Behaviour: Eighteen Edition. Pearson.

Paper – 4.6.3

OCB7306: Human Resource Audit and Human Capital Accounting

Objectives: To provide an understanding of the auditing and accounting procedure of human capital. **Unit**

1: Human Resource Audit: Basics Of Human Resource Audit, Essential Steps in Human Resource Audit, Four Step Approach in Human Resource, Audit as An Improvement Tool, Approaches to Human Resource Audit, Balanced Scorecard, Comprehensive Human Resource Audit, Audit of Employee Turnover, Audit of Labour Laws Compliance, Workplace Compliance: Audit of Safety, Provisions Under the Factories Act, 1948.

Unit 2: Audit of Human Resource Competencies, System, Structure: Audit Of Human Resource Competencies, Audit of Human Resource Strategies, Audit of Human Resource Systems, Audit of Human Resource Structures, Interview Areas, Dimensions and Questions for Audit of Human Resource Development Systems, Audit of Functional Roles of Human Resources

Unit 3: Return on Investment (ROI) in Human Resource Planning: Calculation of Return on Investment in Human Resource Planning, Measuring Return on Investment in Human Resource Data & Applications, Other Approaches in Measuring Effectiveness of Human Resource Planning Programme

Unit 4: Human Capital Accounting: Role of Human Resource Accounting, Uses for Managers and Human Resource Professionals, Uses in Corporate Financial Reporting, Accounting for Human Resource Costs: Concepts and Methods, First-Generation Accounting Systems for Human Resource Costs, Second-Generation Accounting Systems for Human Resource Costs

Unit 5: Accounting for Human Resource Value: Determining Human Resource Value: Concepts and Theory Monetary Measurement Methods, Nonmonetary Measurement Methods, First-Generation Accounting Systems for Human Resource Value, Second and Third-Generation Accounting Systems for Human Resource Value, Human Resources Recording and Disclosure in Financial Statement, Human Resource Accounting in India.

Course Outcome: After completion of this paper student will be able to -

- Know the basics of the human resource audit
- Understand the methods and techniques of the human resource audit
- Understand the benefits of human capital accounting
- Learn the various aspects of the human capital accounting

Textbook:

Human Resource Accounting in India- Suresh Kumar Pandey - Lambert Academic Publishing; Human Resource Planning & Audit – Arun Sekhri - Himalaya

Reference Book:

Human Resource Accounting- Devisetti Prabhakar Rao, Inter-India Publications

Specialization (Banking and IT)

Paper- 4.7.1

OCB7402: Data Science for Business

Objective: This course will introduce students to this rapidly growing field and equip them with some of its basic principles and tools as well as its general mind-set. Students will learn concepts, techniques, and tools they need to deal with various facets of data science practices.

Unit1: Introduction: What is Data Science? - Big Data and Data Science hype – and getting past the hype - Why now? Datafication - Current landscape of perspectives - Skill sets needed

Unit 2: Introduction: Statistical Inference - Populations and samples - Statistical modeling, probability distributions, fitting a model - Intro to R, Exploratory Data Analysis, and the Data Science Process - Basic tools (plots, graphs, and summary statistics)

Unit3: Machine Learning: Machine Learning Algorithm and Usage in Applications - Motivating application: Filtering Spam - Why Linear Regression and k-NN are poor choices for Filtering Spam - Naive Bayes and why it works for Filtering Spam

Unit4: Motivating application: User (customer) retention - Feature Generation (brainstorming, role of domain expertise, and place for imagination) - Feature Selection algorithms – Filters; Wrappers; Decision Trees; Random Forests

Unit5: Introduction: Data Science and Ethical Issues - Discussions on privacy, security, and ethics.

Learning Outcomes: At the conclusion of the course, students should be able

- To Describe What Data Science is, and the skill sets needed to be a data scientist.
- Use R to carry out basic statistical modeling and analysis.
- Explain the significance of exploratory data analysis (EDA) in data science.
- Describe the Data Science Process and how its components interact.
- Identify common approaches used for Feature Generation. Identify basic Feature
- Work effectively (and synergically) in teams on data science projects. •
- Reason around ethical and privacy issues in data science conduct and apply ethical practices.

Textbooks:

Doing Data Science, Straight Talk from The Frontline. Cathy O’Neil and Rachel Schutt, O’Reilly. 2014.

Reference Books:

- Kevin P. Murphy. Machine Learning: A Probabilistic Perspective. ISBN 0262018020. 2013.
- Foster Provost and Tom Fawcett. Data Science for Business: What You Need to Know about Data Mining and Data-analytic Thinking. ISBN 1449361323. 2013.

Paper- 4.7.2

OCB7404: Forex Management

Objectives: To provide an understanding of the foreign exchange management system and technical analysis of the trend lines in the trade finance.

Unit 1: Exchange Rate Policies Adopted by Various Countries, Features of International and Indian Forex Markets, Direct and Indirect Rates, Two-Way Quotations, Pips, Spread, Value Dates-Cash, Tom, Spot, Cross Rates, Rupee Based Currencies' Rate Calculation.

Unit 2: Central Banks' Role in Currency Markets, Exchange Position & Funds Position & Gaps, Rate Calculations - Card Rates, Export, Import, Inward & Outward Remittances' Rates, Forward Contract Rates, Forward Rates-Swaps, Forward Contracts–Booking, Cancellation, Early Delivery, Extension

Unit 3: Treasury Set Up, Dealing Room, Risks in Dealing Room Operations, Risk Limits Like Daylight, Overnight, Stop Loss, Economic Factors Affecting Exchange Rates, Important Data Releases from the U S, Euroland, U K, Japan, and India

Unit 4: Technical Analysis – Introduction to Trend Lines, Support, Resistance, Reversal Patterns like Double Top, Head and Shoulders and Japanese Candlestick Patterns like Hammer, Shooting Star, Bullish/Bearish Engulfing TRADE FINANCE

Unit 5: Basic Export Procedures, Import Procedures, Letters of Credit, Negotiation of Documents, UCPDC, Factoring, Forfeiting, External Commercial Borrowings, Syndicated Loans, FCCB, Buyers' Credit

Course Outcome: After completion of this paper student will be able to -

- Develop Insights about the foreign exchange rate policies
- Present and analyse central bank policies for exchange rate
- Understand the treasury set up
- Develop the skills to analyse trend lines
- Gain Knowledge about the export and import procedures.

Textbook:

Forex Management- Dr. Paresh Shah, Biztantra publication.

Reference Book:

Foreign Exchange Management- Esha Sharma, Laxmi Publications

Paper- 4.7.3

OCB7406: Banking and Insurance Law

Objectives: To provide an understanding of the different laws prevailing for regulating banking and insurance sector

Unit1: Relationship between banker and customer: legal framework of corporate banking, loan documentation.

Unit2: Law and procedure governing banking instruments: Law for governing the process of cheque, bill of exchange, letter of credit, etc.

Unit3 Lending policies: Risk and profitability planning and legal procedure of lending

Unit4 Law relating to Banking Regulation: book evidence; recovery of debts due to banks and financial institutions.

Unit5 Insurance Law: Insurance Regulatory Development Authority Act, law relating to Life Insurance, law relating to general insurance, Structure, power, function of General Insurance Corporation of India

Course Outcome: After completion of this paper student will be able to –

- Understand the Relationship between banker and customer
- Know the Law and procedure governing banking instruments
- Understand the Lending policies
- Know the law relating to banking policies
- Gain Knowledge about the prevailing insurance law

Textbook:

Banking Law & Insurance- Sonali Sharma, Singhal law publication

Reference Book:

Banking and Insurance Law and Practice – Indian Institute of Banking and Finance

MASTER OF BUSINESS ADMINISTRATION (MBA)

[M. B. A.]

COURSE STRUCTURE & SYLLABUS

Master of Business Administration (MBA)

Programme Educational Objectives (PEOs)

- Building a strong foundation in all the key functional areas of business
- Fostering strong personal, interpersonal, group and communication skills
- Providing academic flexibility to promote the customization and personalization of knowledge
- Engage with industry for executive education
- Develop centers of excellence aligned with emerging areas of knowledge

Programme Outcomes (POs)

- Provide educational preparation for a career in business management
- Support members of faculty for development of intellectual capital
- Network with industry and greater academia to create, share and use knowledge.
- Meet institutional social responsibilities aligned to the vision and regulations.
- Building a responsive sustainable financial management model

Programme Specific Outcomes (PSOs)

- Business Environment and Domain Knowledge (BEDK)
- Critical thinking, Business Analysis, Problem Solving and Innovative Solutions (CBPI)
- Global Exposure and Cross-Cultural Understanding (GECCU)
- Social Responsiveness and Ethics (SRE)
- Effective Communication (EC)
- Leadership and Teamwork (LT)

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60301	Marketing Management – I	2	0	0	2

1. Introduction

Marketing is one of the fundamental functions of any firm. Business environment is always in a state of dynamism. This necessitates changes in marketing strategies adopted by firms that have to be aligned along the changing contours of market. Marketing decisions involve both strategic and tactical level activities of developing products and services with an emphasis on creating customer value and building customer relationships. The course develops concepts and skills necessary for taking marketing decision-making and illustrates how various decision-making tools and strategic frameworks apply to actual business scenarios. The goal of this course is to develop a disciplined process for addressing marketing issues and problems in a variety of settings, and to give students the tools and background necessary to think through marketing problems. The aim of the course is to develop these skills in a deep-rooted manner so that students retain the marketing skills learnt through the course.

2. Intended learning outcomes

1. Define markets and its types
2. Understand the concepts of marketing and their evolution
3. Relate the strategic frameworks developed to marketing function
4. Understand the macro and micro factors of marketing environment
5. Explain the marketing process
6. Develop a marketing plan
7. Understand the consumer buying behaviour and the theories underlying the behaviours
8. Relate buying behaviour with respect to organizational buyer
9. Understand the customer relationship management
10. Understand the marketing research objectives and techniques
11. Understand the fundamentals of Segmentation, Targeting & Positioning
12. Understand the concept of Customer Relationship Management, Customer Lifetime Value

3. Course content

- **Module 1: Core concepts of Marketing:** Objectives and Definitions of marketing, Fundamental Marketing concepts: Needs and Wants and Demands, Orientations to the market – Concepts, Marketing Myopia, and Differentiating between the three with illustrations.
- **Module 2: Understanding the Strategic Planning Models:** Strategic Planning Models- Business Unit Planning, Value Chain Analysis, Decision making through: SWOT Analysis, Porter's Generic Strategies and 5 forces, BCG Matrix, and Ansoff's grid.
- **Module 3: Marketing Environment:** Importance of environment scanning, Understanding Macro Environment variables/components, Understanding Micro Environment variables/components, and Differences between macro & micro variables
- **Module 4: Consumer Buying Behaviour:** Define Consumer & its types, Buyer Roles, Theories of Consumer decision making (Buying Situation), Factors influencing Consumer Behaviour, Consumer buying processes & its stages, Behaviour Key Psychological Processes, Consumerism
- **Module 5: Organizational Buying Behaviour:** B2B- Business Market vs. Consumer Market, Stages in Buying Process, B2B Customer Relationship Management,
- **Module 6: Developing a Marketing Plan:** Marketing as a process, Marketing Plan components, and evaluation and understanding
- **Module 7: Marketing Research:** Marketing Research, Types of MR, Quantitative and qualitative, The MR process, Demand estimation, sales forecasting, forecasting methods,
- **Module 8: Segmentation, Targeting, Positioning:** Levels of Segmentation, Basis for Segmentation and methods, Segmentation Criteria and evaluation of Segments, Selection of Target Segment, Product

differentiation, Differentiation strategies, Positioning stances, and positioning strategies

- **Module 9: Customer Relationship Management:** Customer Lifetime Value-The concept of Value delivery chain and supply chain, Differentiation between the two, Customer value and satisfaction, and Customer Lifetime Value.

4. Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Marketing Management – A South Asian Perspective	Kotler, Philip/ Keller, Kevin /Koshy, Abraham/Jha, M	Pearson	15 th
Reference Books				
1	MKTG	Lamb, Hair, McDaniel	Cengage	Latest
2	Marketing Management	Ramaswamy, VS & Namkumari, S	Macmillan	Latest
3	Marketing	Paul Fill Baines, & Chris Page, Kelly	Oxford University Press	Latest
4	Marketing Management	Arun Kumar & NMeenakshi	Vikas	3 rd Edition

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60204	Accounting for Managers	1.5	0	0.5	2

1. Introduction

Accounting has two perspectives. First, recording transactions and developing accounting reports and second, use of the report in decision-making. Three sets of issues are covered- the process of recording of the transactions, generation of summary reports, financial statements and use of financial data for decision-making.

2. Intended learning outcomes

- Able to remember all the accounting concepts
- Able to understand the various concepts
- Able to apply the concepts for the real life experience
- Able to analyze the accounting information
- Able to evaluate the various alternatives of accounting information
- Able to create the new ideas differently for the analysis of financial statements

3. Contents

- **Accounting basic and process:** Accounting process and financial statement preparation as per the Indian Company Act 2013
- **Indian Accounting Standards in convergence with IFRS:** Ind AS-1: Presentation of Financial Statements; Ind AS-7: Statement of Cash flows; Ind AS-8: Accounting Policies, Changes in Accounting Estimates and Errors; Ind AS-10: Events after the reporting Period; Ind AS 18- Revenue Recognition (Goods and Services); Ind AS-37- Provision, Contingent liabilities and Contingent Assets.
- **Cash flow statement preparation and analysis-** stand alone and consolidated financial statements
- **Company Annual Report-** discussion on annual report contents including schedules, management discussion and investor presentation by companies
- **Analysis of Financial Statement** – how to read balance sheet, tools used for analysis of Financial Statements- Ratio Analysis- Balance Sheet Ratios, Profit and loss account and Inter- statement ratio
- **Financial Planning-** Financial planning and forecasting, projected cash flow estimation, pro- forma financial statement preparation
- **Sectoral Financial Statement Analysis** – analysis of financial statements of banks, insurance companies, non-profit organizations

4. Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Financial Accounting -A Managerial Perspective	Narayan Swamy R	PHI Publication	Latest
Reference Books				
1	Financial Accounting for Managers	T.P.Ghosh	Taxman Publication	Latest
2	Financial Accounting for Management	Ramchandran N & Ramkumar K	Mcgraw Hill	Latest
3	Accounting (Text & Cases)	Anthony Robert N	TMH Publication	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60103	Organizational Behavior	2	0	0	2

1. Introduction

Understanding the dynamics of individual and interpersonal behavior in organizational setting; developing students' knowledge and competence to deal with human problems of management; developing students' awareness and insight for personal and professional growth and finally making students aware about group formation, dynamics, functions and its effective management.

2. Intended Learning Outcomes

- Students will be able to understand the fundamental concepts of individual, group and organizational behavior
- Students will be able to understand and relate to those micro aspects of individual behavior such as learning, conditioning, perception etc. that might impact upon the larger organizational context
- Students would be able to understand the various personality types, attitudes and utilize the knowledge for augmenting the performance in the organization.
- Students will understand and be aware about group formation, group dynamics, functions and the challenges of group management
- Students will be able to handle conflict resolution techniques in a more effective manner.
- Students will be able to understand various nuances involved in leadership and would utilize the same in order to adorn leadership positions.

3. Course Content

- Introduction to OB & Diversity in Organization: Management Functions: Management roles & skills, Importance of OB, challenges & opportunities of OB, Diversity, Biographical characteristics affecting employee performance & understanding
- Attitudes & Job Satisfaction: Types of Attitudes, Cognitive Dissonance Theory, Measuring Job Satisfaction, The effect of Job Satisfaction on Employee Performance, Employee Dissatisfaction, Global implications
- Emotions & Moods: Basic Emotions, Basic Moods, Emotional Labour, Emotional Intelligence, OB Application of Emotions & Moods, Global Issues
- Personality & Values: Personality, Myers-Briggs Type Indicator The Big Five Personality Model, Importance of values, Types of values, Values across cultures (Global Implications), Self-Assessment test on Personality
- Perception & Individual Decision Making: Factors Influencing Perception, Person Perception, Decision making in Organization, Ethics in Decision Making
- Motivation: Brief on theories of motivation & concepts and application: Early theories of motivation: Maslow's Hierarchy of Needs, Theory X and Theory Y, Two Factor Theory, McClelland's Theory of Needs, Contemporary theories: ERG theory, Self-efficacy theory, Equity theory, Cognitive Evaluation theory, Goal setting theory, Expectancy theory, Job characteristics model, Rewards to motivate employees
- Concepts of groups, individual & the group, Group cohesion, development, structure and influence: Concepts of group, The nature of group dynamics, The individual and the group, Group formation, Group cohesion and development, Group structure: role, norm, status, Group influence, Social loafing,

Sources of influence

- Group Decision Making: Group vs. the Individual, Group Think & Group Shift & Group decision making techniques, Effective Groups, Self-Managing Teams, Advantages and Disadvantages of Groups,
- Understanding work teams: Difference between groups and teams, Types of Teams, Creating Effective Teams, Turning Individuals into team players.
- Communication: Basics of Communication, Process & Functions of Communication, Interpersonal Communication, Barriers to Communication, Organizational Communication, Gender differences in communication, Silence as Communication, Politically Correct Communication
- Leadership and issues in Leadership: Brief on theories, Charismatic and Transformational Leadership, Authentic Leadership, Trust and Servant Leadership, Leader as the mentor
- Power & Politics: Bases of Power, Dependency: The Key to Power; Power Tactics; Power in groups; Unequal power in the workplace; Politics: Power in Action; Causes and consequences of political behaviour
- Conflict & Negotiation: Roots of conflict; The conflict process; confrontation and escalation; Negotiation: process, issues, cultural differences in negotiation, conflict resolution, third party negotiation
- Stress Management: Stress, potential sources of stress, Consequences of stress, Managing stress.

4. Textbook and Reference Books

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
	Organization Behavior	Robbins, S., Judge, T.A. and Vohra, N.	Pearson	18 th
Reference Books				
1	Organization Behavior	McShane S., and Von Glinow, M.	TMH	3 rd
2	Organizational Behavior	Uma Sekharan	TMH	2 nd
3	Organization Behavior	Fred Luthans	TMH	10 th

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60401	Managerial Economics – I	2	0	0	2

1. Introduction

The course is designed to serve as a foundation of economic decision making that forms the basis of almost all disciplines of management. Decisions taken by individuals, businesses and government or regulator, and a framework to evaluate those decisions is the subject matter of this course. Different factors underlying the behaviour of firms under various market structures are studied and the resulting market outcomes are tested through case studies. The course also incorporates insights on the impact of asymmetric information and uncertainty on decisions and outcomes. In order to make the course application oriented solution of various real life cases are included in the pedagogy.

2. Intended Learning Outcomes

- To develop an understanding of different types of economic agents and their economic motives, and how the self-interest of these agents lead to the formation of markets.
- To develop a theoretical understanding of economic concepts like production functions, cost structure, firm and market structures, and the significance of the economic assumptions underlying the theoretical models.
- To develop an understanding of the implications on prices and welfare of different market structures, the causes of market failures, and the need for regulation.
- To develop the capacity to relate to the Indian economic environment -- how do certain markets work, role of information and uncertainty in economic decision making.
- To be able to apply the knowledge in solving real life problems during the period of SIP and placement.

3. Course Contents

- **Module 1:** How the Economy Works? (Household/ Firms/ Co-operatives/Government), Economic Decision Making highlighting the three central problems of our economy. Theory of Demand: Consumer Behaviour: Demand-Supply Analysis and Elasticity Analysis and Applications of Elasticity for Demand and Supply; Demand Forecasting. Graphing using Excel.
- **Module 2:** Production theory & Analysis: Dealing with Short run and Long run behaviour; Cost Theory & Analysis: Linkage between cost, revenue and output through optimization. Use of Calculus and Derivatives in Cost Analysis. Graphing using Excel.
- **Module 3:** Market Structure & Market Morphology: Price and output determination under Perfect and Imperfect Market in both short run and long run; Pricing Strategies in Markets, Perfect or Fair Competition, Monopoly (Barriers/ Restrictions/exclusive rights or ownership), The three degrees of Price Discrimination. Case Insights. Competition in the Indian Mutual Fund Market.
- **Module 4:** Monopolistic competition: Price & output decision under monopolistic competition. Oligopoly-Perfect & Imperfect Oligopoly, Cartels, Price leadership.
Application of game theory to determine optimal outcome under oligopoly market. Case Insights. Case on OPEC as a Cartel. Price war between OPEC vs. Non-OPEC Nation as per the current scenario.
- **Module 5:** Market Imperfections: Market failure, Imperfect & asymmetric information; & Decision under uncertainty.

4. Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Principles of Microeconomics	N. Gregory Mankiw	Cengage	7 th Edition
Reference Books				
1	Economics for Business & Management	K Alec Chrystal & Richard G. Lipsey	Oxford University Press	Latest
2	Managerial Economics in a Global Economy	Dominick Salvatore	McGraw Hill	3 rd Edition
3	Managerial Economics	Paul G Keat, Philip K Y Young and Sreejata Banerjee	Pearson	6 th Edition
4	Economics	Paul A Samueson and William D Nordhaus	McGraw Hill	19 th Edition

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60503	Quantitative Techniques – I	2	0	0	2

1. Introduction

Businesses are now increasingly using statistical techniques to convert data into information, which helps in appropriate decision making. This paper, in Decision Sciences area, prepares the students understanding and appreciating the essential concepts and applications, with focus on relevant tools and techniques.

2. Intended learning outcomes

To help management students appreciate the relevance and importance of the use of quantified/ statistical facts, in the process of decision-making in the ever changing business environment. To discuss and apply basic statistical tools and techniques, which are useful in every area of business.

3. Course content

- Role of Statistical Data, Summary & Descriptive Statistics
- Measures of Central Tendency
- Measures of Dispersion, Coeff. of variation
- Probability & Probability Distributions
- Discrete Probability distributions: Binomial & Poisson distributions
- Continuous Probability Distribution: Normal Distribution, Using Standard Normal Probability Distribution table
- Sampling Concepts (What, why and how sampling made; Prob & non-prob. Sampling)
- Estimation:
- Introduction, Point Estimates, Interval Estimates, Confidence Intervals (applications & concepts only);
- Testing Hypotheses:
- One-Sample Tests
- Two-Sample Tests
- Chi-Square as a Test for independence
- Analysis of Variance (ANOVA)

4. Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Statistics for Management	Levin, Rubin et al	Pearson	2017 or Latest
Reference Books				
1	Quantitative Methods for Bus	Anderson, Sweeny et al	Cengage	Latest
2	Intro. Mgmt Science	Anderson, Sweeny et al	Cengage	Latest
3	Managerial Statistics	Gerald Keller	Cengage	9 th Ed. 2012/ latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60601	Information Technology for Managers	2	0	0	2

1. Introduction

The course is supposed to cover five primary aspects, such as, Basics of computer hardware, software and number systems; Basics of Data storage and communication technologies; Business use of Information Technology: Primarily TPS, MIS and DSS; Emerging Technologies; and IT Privacy and Security

2. Intended learning outcomes

- Convert numbers between various number systems and perform basic arithmetic operations
- Explain the key parts of a computer and how they work together
- Explain the key concepts of data transmission
- Articulate the difference between various IT systems such as MIS, DSS and TPS and explain the basics of Enterprise Systems
- Show a clear understanding of Internet of Things (IoT) and Cloud Computing, and how they are transforming business applications
- Understand the basics of IT Security and Privacy issues including attacks and frauds and their mitigation.

3. Course Content

- **Number Systems:** Numbers systems conversions, binary and hexadecimal numbers, Basic arithmetic operations
- **Computing Environment and Data Storage:** History of computing, early computers, vacuum tubes, various computer generations, Parts of computer and memory including CPU, bus, peripherals, Basics of digital data storage, various primary and secondary memories, Role of operating systems, Various generations and types of computer software
- **Data Transmission:** Basics of digital transmission, networking technologies and physical transmission media, LAN, WAN and Internet Network topologies, and devices
- **Business use of IT:** Types of IT systems: TPS, MIS and DSS, and key features of each, Overview of Enterprise Systems such as ERP, CRM and SCM
- **New and Emerging Technologies:** Basics of Internet of things, wireless transmission technologies, and architecture, Opportunities and challenges in implementation, Cloud computing overview, and types of cloud services such as IaaS, PaaS and SaaS
- **IT Privacy and Security:** Information security challenges including viruses and worms, Trojans, hacking, denial of service, frauds, attacks, social engineering and phishing, Mitigations such as Firewall, Antivirus, VPN, Proxy and InfoSec policies, Evolving threats and opportunities

4. Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Information Technology for Management	Behl, Ramesh	McGraw Hill	Latest
Reference Books				
1	Computer Fundamentals	Anita Goel	Pearson Education India	Latest
2	Management Information Systems	O'Brien, Marakas and Behl	McGraw Hill	Latest
3	Cloud Computing: A Practical Approach	Velte, Velte and Elsenpeter	McGraw Hill	Latest
4	MS Access: Plain and Simple	Frye, Curtis	Microsoft Press	Latest
5	Management Information Systems	Jawadekar, Waman S.	McGraw Hill	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60701	Business Communication	1.5	0	0.5	2

1. Introduction

There is a growing evidence that effective communication is the key for keeping an enterprise, as a system of individuals, working together for winning in the market place. In a volatile, uncertain, complex and ambiguous world, an organization needs the ability to respond fast. In order to be able to respond fast, effective communication is of prime importance at any organization today. It supports open interaction with a free flow of information, managing organizational communication processes, and creating an open and adaptive communication system. Accordingly, management graduates are expected to be proficient in written and oral communication.

2. Intended learning outcomes

- Apply the six fundamentals of effective writing (focus and coherence, organization and structure, development of ideas, voice, word choice, and conventions)
- Demonstrate the ability to write effectively in a variety of modes, including business proposals, incident reports, and policy documents
- Use the principles of oral communication to make presentations supported with audio-visual aids and deliver prepared as well as extempore speech.
- Develop structured resume and covering letter.

3. Course content

- **Module 1:** An introduction to business communication – the process, and the barriers. Types, channels, directions of Business Communication in an Organizational Communication Network.
- **Module 2:** Oral Communication. Understanding the importance of non-verbal communication; Kinesics, Proxemics, Paralanguage; Other minor components; Active listening; Improving public speaking skills; Designing structured presentations; Using Visual Aids effectively during Business Presentations; and Engaging in vibrant business-related conversations.
- **Module 3:** Written Communication – I. Enhancing meeting productivity, preparing an agenda, notifying participants, and writing the minutes.
- **Module 4:** Written Communication – II. Organizing and composing routine, good news, bad news and persuasive messages, Writing business letters, Writing business reports and proposals, Creating concise memos, circulars and office orders, and Effective Email writing
- **Module 5:** Written Communication – III. Tailoring the perfect resume as an effective self- marketing tool and Drafting cover letters

4. Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Essential Strategies for Twenty-first Century Managers	Shalini Verma	Vikas Publications	2nd
Reference Books				
1	Business Communication Today	Bovee, Thill and Chaturvedi	Pearson Education	9 th , 2008
2	Basic Business Communication	Lesikar and Flatley	TataMcGraw-Hill	9 th , 2001
3	Speaking and Writing for Effective Business Communication	Francis Soundararaj	Macmillan India Ltd.	2015
4	Contemporary Business Communication	Scot Ober	Biztantra	6 th , 2006
5	Basic Managerial Skills For All	E. H. McGrath, S. J.	PHI	9 th , 2011

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60702	Legal Aspects of Business	2	0	0	2

Introduction

Business executives have an obligation to create value for their stakeholders, while confirming to basic rules of society, both those embodied in law and those embodied in ethical custom. Law, in one form or another, permeates modern society at all levels of government—local, state, federal, and in limited circumstances, international. Consequently, today's businesspersons and executives benefit by developing a working knowledge of law. In the business world, we may not always know what the substantive law is; but if we can spot the issue (before it becomes a problem), we will be able to raise it within the organization, with outside counsel, to find answers. Businesspersons who are adept at issue-spotting are invaluable to their organizations.

Intended learning outcomes

The following are the intended learning outcomes of the course, aligning with the programme outcome- Business Environment and Domain Knowledge (BEDK):

- Gain understanding of substantive law- law that creates and controls the rights and duties of parties.
- Gain understanding of procedural law - law that creates and controls the process of enforcing the rights and duties under substantive law.
- Develop issue-spotting skills- spot the issue (hopefully before it becomes a problem), to raise it with the appropriate persons within the organization, with outside counsel, or find the answer by self.

Course content

- Introduction and overview, scope & subject matter of legal environment.
- Indian contract act, 1872: offer & acceptance; competence of the parties to contract; objects, consideration, contingent & quasi contracts, performance, termination, breach of contracts & remedies; void, voidable, illegal & unlawful agreements; guarantee & indemnity; contract of agency
- Sale of goods act, 1930: contract of sale, price; conditions, warranties; rights & duties of seller & buyer; rights of an unpaid seller, remedies of breach of contract; auction sale.
- Arbitration & conciliation act, 1996: legal provisions relating to arbitration & business contracts; provisions relating to conciliation,
- Indian companies act 2013: , nature, types and characteristics of a company; incorporation of a company; lifting of corporate veil; MOA & AOA; shares & share capital; corporate governance; accounts & audit; Negotiable instruments act meaning, nature & types of negotiable instruments; law relating to negotiable instruments; rights & liabilities of paying banker & collecting banker.
- Overview of Consumer Protection Act, 1986
- Overview of Information Technology Act, 2000

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Legal Aspects of Business	Kumar, Ravinder	Cengage	4th
Reference Books				
1	A Manual of Business Law	S N Maheshwari and S K Maheshwari	HPH	2011
2	Legal Aspects of Business	R. Kumar	Taxman Publications	2015
3	The Companies Act, 2013	Ministry Of Corporate Affairs		2015
4	Legal Aspects of Business	Daniel Albuquerque	Oxford Publications	2015
5	Legal Aspects of Business	Akhileswar Pathak	McGraw Hill	7th, 2019
6.	Elements of Mercantile Law	N. D Kapoor,	S. Chand	4 th , 2014

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60102	Human Resource Management	1.5	0	0.5	2

Introduction

Today, HR managers play a major role in strategic decision making and are evolving as business partners. At the same time, Human Resource Management is no more limited to only HR personnel. Rather, every manager needs to work on it along with the HR department. Managers who are good at HRM can use their workforce in a more efficient and effective manner to gain competitive advantage for their organizations. The course aims to equip students with the tools and practices of HRM and help them appreciate they change they can affect in an organization by managing people in the best possible manner. It also aims at providing an overview of the current people challenges that organizations/ managers are facing today.

Intended Learning Outcomes

- Acquainted with basic tools and techniques of HRM like job evaluation, assessment center, competency mapping etc.
- Relate to the basic HR functions and processes like Recruitment, training, performance management etc.
- Understand the role of HR in today's corporate world, challenges and how to address them while well-guarding employee sensitivities.
- Understand the legal framework of HRM.
- Understand the importance of harmonious Employee Relations.

Course Content

Module 1: HRM & Strategic HRM

- Introduction - Journey of HR from personnel management to strategic HRM, Environmental Influences on HRM, Functions of HR in organizations, Modern day challenges to HR
- Strategic HRM – Evolution of HR as a business partner, Need for Strategic HRM, HR Metrics, Using the VRIO Framework for competitive advantage

Module 2: HR Processes

- Job Analysis – What is Job Analysis? Sources of data collection & methods of conducting a job analysis, Outcomes of a job analysis: Job description and job specification.
- Job Evaluation - What is Job Evaluation? Outcomes of job evaluation: Job banding leading to pay bands, Different methods of JE : Ranking, classification, Factor comparison and point method
- Manpower Planning - Concept, Objectives & Methods
- Performance Management - Design principles of PMS, Stages of a PMS cycle - Goal setting, SMART goals, KPA and KPI, Balanced score card & Goal cascading, Mid-year review and feedback; Different rating scales – Graphic rating, Forced choice, Mixed standard scale, BARS, BOS; Methods of evaluation – rating, ranking, MBO; Rater errors – Halo effect, Horn effect, error of central tendency, leniency/ strictness error, recency error, attribution bias, similar-to-me error, stereotyping; Concept of Normalization – Need & process; Competency and assessment center
- Compensation & benefits' Administration – Types of Compensation, HR Metrics & Compensation, Legal Effects on Pay System, Base Pay System, Components of Pay Structures, Fixed & variable Pay, Types of benefits
- Recruitment and Selection – Concepts, process, methods & evaluation
- T&D and Career Development – Concept, Methods, calculating training effectiveness using Kirkpatrick's model, Career Planning, Types of Career Paths, Schein's Career anchors and its implications on jobs
- Employee engagement - Engagement drivers at work place, Role of HR in enhancing engagement, Challenges in engaging millennials

Module 3: Industrial Relations

- Introduction – IR scenario in India: Current issues and future challenges, Industrial disputes and preventive machinery and settlement
- Trade Union & Collective Bargaining – The Trade Union Act, 1926; Union recognition and problems, the process of bargaining, Conditions essential for effective bargaining
- Employee Grievance Management and Discipline

Textbook and Reference Books

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
	Human Resource Management	Dessler, G.	Pearson	15 th
Reference Books				
1	Principles of HRM	Bohlander, G.	Cengage	16 th
2	Human Resource Management	Sanghi, S.	Vikas	2 nd

CourseCode	Name of the course	Credits			
		L	T	P	Total
OBM60803	Production & Operations Management – I	2	0	0	2

Introduction

Production and operations management (POM) deals with the design and operation of the system producing goods and services. It explores the ways operations managers approach and analyze strategic decisions in operations with a focus on designing products and processes, allocating scarce resources to strategic alternatives, and long-range capacity and facility planning. These operations functions help in achieving the long-range broader organizational objectives.

Subsequent focus will be on medium and short-term planning and control activities. The pedagogy will strive to strike a balance between theoretical and practical perspectives in manufacturing and service organizations.

Intended learning outcomes

- Identify the elements of operations and supply chain management (OSCM).
- Identify the various transformation processes in supply chains of their choice.
- Apply operations management concepts for enhancing competitiveness along the dimensions of cost, quality, flexibility and delivery.
- Prepare for the various career opportunities in operations and supply chain management.
- Know the issues related to the design of products and services with reference to design-for-x (DFX) methodologies governed by design thinking.
- Understand the concept of product lifecycle management (PLM) and supply chain management (SCM) governed by design thinking.
- Analyze projects using network-planning models.
- Evaluate capacity alternatives in supply chains using decision trees.
- Understand, explain and analyze simple manufacturing and service processes.
- Analyze logistics-driven location decisions.
- Analyze common types of manufacturing layouts and illustrate layouts in non-manufacturing setups.
- Demonstrate the application of layout concepts in a digital manufacturing environment.
- Explain how jobs are designed and analyze manufacturing, service and logistics processes to ensure competitiveness of a firm.

Course content

- Operations Management for Competitive Advantage. Operations strategy and Competitiveness, Operations & the Value Chain – Introducing the Supply Chain Framework, Project Management, Product & Service Design – Importance of Design for Environment & Sustainability.
- Process Selection & Supply Chain Design. Forecasting in Operations & Supply Chain Management, Capacity Management– Site Selection & Location Analysis, Processes and Technologies – Process Selection & Design, Facilities Management – Facility Layout, Process Analysis – Job Design & Work Measurement.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Operations and Supply Chain Management	Chase, Shankar, Jacobs	TMH	15e
Reference Books				
1	Operations Management	Roger G. Schroeder	Irwin McGraw-Hill	
2	Operations Management : Theory & Practice	B.Mahadevan	Pearson Education	
3	Advanced Operations	RP Mohanty & SG	Pearson	

Semester II

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60302	Marketing Management – II	2	0	0	2

Introduction

In this course, students develop a critical appreciation of the basic concepts and techniques of marketing management and strategy with an emphasis on creating customer value and building customer relationships. This course simply takes up from where Marketing Management - I ends. The course develops concepts and skills necessary for marketing decision-making and illustrates how various decision-making tools apply to actual business situations. This course focuses on how the major elements of the marketing mix - product policy, channels of distribution, communication, and pricing - fit within different analytical frameworks that are useful to managers. A detailed analysis of these elements shall be done in order to conduct a thorough strategic analysis of marketing opportunities and communicate marketing decisions. This will be followed by coverage of related concepts in services marketing, brand management and competitive strategies. The course will enable students to see “marketing in action” in the business world.

Intended learning outcomes

- Explain the role each element plays in creating value
- Compare different pricing models
- Evaluate the use of different channels of distribution by existing businesses
- Critique advertising execution
- Create a persuasive advertising piece
- Understand the concept of services marketing
- Explain concepts of Brand Strategy, Brand Equity and Brand Management
- Detail various competitive strategies
- Have a view of Holistic Marketing and ability to develop a comprehensive marketing plan

Course content

- **Module 1: Marketing Mix Variables:** Product Decisions- concept of a Product - Product mix decisions’ New Product Development – Steps in Product Development. Price Decision: Pricing objectives, Different pricing methods, Product Mix pricing strategies, Price adjustment strategy. Channel Decision: Nature of Marketing Channels, Types of Channel flows, Functions of Distribution Channel, Channel co-operation, conflict and competition, and Channel members – Distributors, Wholesalers and Retailers. Promotion Decision: Promotion mix, Advertising objectives, Developing Advertising Program, Evaluating Advertisement effectiveness, Role of Media in Advertising, and Role of Sales Promotion
- **Module 2: Services Marketing:** Service Industries, Marketing Strategy for service firms, and 7Ps, Managing Service Quality, Product Support Services
- **Module 3: Brand Equity and Brand Management:** Building and measuring Brand Equity, Brand Management tools, and Brand collaborations
- **Module 4: Marketing in Different Contexts:** Competitive Marketing Strategy, Rural Marketing, International Marketing

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Marketing Management	Kotler, Philip & Keller, Kevin	Pearson Education	15 th
Reference Books				
1	MKTG A South Asian Perspective	Lamb, Hair, Sharma, McDaniel	Cengage Learning	1 st

Course	Name of the course	Credits			
Code		L	T	P	Total
OBM60202	Cost and Management Accounting	2	0	0	2

Introduction:

This course of Cost and Management Accounting has been designed to equip students with the desired skill set and knowledge, which will help them to become better decision makers to carry out their responsibility at different managerial positions. The course guides the students to collect relevant information to make the most beneficial use of it to take appropriate decisions. The course teaches the mechanisms to evaluate the performance of departments/jobs/individuals and suggests control mechanisms to bring the job to the track, if found necessary. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Intended Learning Outcomes:

- Students will develop the understanding of the cost concepts, which they can use in their day to day decision making.
- They will be able to calculate the cost of jobs and services and fix the selling price.
- They will develop the skill to evaluate and analyse alternatives for profitable business decisions.
- Students will be able to prepare budgets for various activities, and control the cost in a better way.
- Finally they can prepare better MIS and Performance reports for the need of higher management

Course Content:

- **Managerial Accounting and Cost Concepts-** General Cost Classification- Product costs and Period costs, Fixed Cost/Variable cost, Opportunity cost, Sunk Cost
- **Job order costing-** Allocation and Absorption of Indirect cost (Overhead): Primary and Secondary Distribution
- **Process Costing-**Cost flow in Process Costing, Equivalent units of Production
- **Activity Based Costing-**Why ABC? ABC vs. Traditional Costing, Designing an Activity Based Costing System, Limitations of Activity Based Costing
- **Cost Volume Profit Analysis-**Cost Behaviour Pattern, Contribution Margin Ratio, Break Even Analysis, Sales Mix and Break Even Analysis
- **Relevant costs for decision making** – short term decision making, shut down decision, make or buy decision, segmented profit planning decision, product mix decisions, etc.
- **Profit Planning and performance analysis** -The Basic Framework of Budgeting, Preparing the Master Budget, Operating and financial Budget, Cash Budget
- **Variance analysis and MIS reporting** - Activity Variance, Revenue and Cost variance, efficiency ratios etc.

- **Contemporary issues:** Life cycle costing, Kaizen costing, Target Costing, Balanced Scorecard, etc.

Text and Reference Books

Text and Reference Books				
Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	No text book is prescribed. Course handout will be used			
Reference Books				
1	Management and Cost Accounting	Colin Drury	Cengage	Latest
2	Basic financial Accounting for Management	Paresh Shah	Oxford Publications	Latest
3	Managerial Accounting	Garrison, Noreen & Brewer	McGraw Hill	Latest
4	Cost Accounting	Hornngren, Datar Rajan	Pearson	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60403	Managerial Economics – II	2	0	0	2

Introduction

The course is designed to equip the students with tools to understand and relate to the economic reality around them through an understanding of various macroeconomic concepts and to use the tools to evaluate the implications of the government policy on businesses, sectors, industries and the economy. In order to make the course application oriented solution of various real life cases are included in the pedagogy.

Intended Learning Outcomes

- To develop an understanding of the macroeconomic aggregates such as output, unemployment, inflation, productivity and the major challenges associated with the measurement of these aggregates.
- To develop a theoretical understanding of the role of the central bank and money supply, linkages between financial markets and the real economy, and how these linkages influence the impact of economic policies over different time horizons.
- To enable students understand the basics and rationale of Fiscal and Monetary policy instruments and their role in policy making and during the phases of the business cycles
- To develop an understanding about the international linkages of an open economy, international capital flows, balance of payments, and the determination of exchange rates.
- To develop the capacity to relate the theoretical concepts with the real world with reference to the Indian economy. Different periods of Indian growth and development will be studied to highlight the structural aspects of growth, issues and prospects of the Indian economy.
- To be able to apply the knowledge in solving real life problems during the period of SIP and placement.
- To be able to design and formulate models based on their learning.

Course Contents

- **Module 1:** Macroeconomics Issues, Concepts & Model Building, National Income Accounting; Income & Spending; Money Interest & Income. Key Concepts- Gross Domestic Product. Calculation of Gross Domestic product. Difference between GDP and GNP. Measuring GDP through various approaches- GDP according to product approach. GDP according to expenditure approach. GDP according to income approach. Real

Vs. Nominal GDP, GDP deflator Product-income- expenditure identity

- **Module 2:** Product & Money Market Analysis. Theory of National Income Determination; The Multiplier Effect. Aggregate Demand; Aggregate Supply function; Money Market: Theory of Money Supply, Various Measures of Money Supply- M0, M1, M2, M3, M4.
- **Module 3:** Role of Central and Commercial Banks as Credit Mechanism. The Central Bank, money and credit. The money stock and the money multiplier. The money multiplier, high powered money and adjustment. The role of Commercial Bank as a Credit Creator. The process of Credit creation by individual bank and multiple banks. Case insights on Current COVID-19
- **Module 4:** Monetary & Fiscal Policy. Quantitative and Qualitative tools of Credit Control – CRR, SLR, Repos, RRR, MSF, Margin Requirements etc. to counter business cycles. Use of Fiscal tools to combat cyclical downturns. Fiscal Math using Excel. Case Insights on current COVID-19.
- **Module 5:** The Dynamics of Inflation & Unemployment. Inflation and aggregate supply curve. Dynamics of aggregate demand. Measurement CPI vs. WPI. Trade-off between Inflation & Unemployment-Phillips Curve Short Vs. Long run
- **Module 6:** Exchange rate Determination & Indian Economic Overview, Budget Analysis. Adjustment under fixed and flexible exchange rate. Exchange rate changes and Trade adjustments. Monetary approach to the Balance of Payments, PPP Approach, Interest Rate Parity Approach. Case Insights on current market crisis. Growth vs. Development; Role of Agriculture, Industry & Service Sector in Indian Economy; Economics Reforms. Analysis of the current Union Budget.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Macro Economics, Policy & Practices	Frederic S. Mishkin	Pearson	Second Edition
Reference Books				
1	Macro Economics	Andrew B. Abel & Ben Bernanke	Pearson	Latest edition
2	Macro Economics	Oliver Blanchard	Pearson Education	Latest edition
3	Macro Economics	Rudiger Dornbush, Stanley Fisher and Richard Startz	McGraw Hill Education	Latest edition
4	Macro economics Theory & Policy	D.N Dwivedi	McGraw Hill Education	5 th edition
5	Economic Policy Reforms and the Indian Economy	by Anne O. Krueger	University of Chicago Press	
6	Indian Economy since Independence	Uma Kapila	Academic Foundation	Latest edition

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60205	Corporate Finance – I	2	0	0	2

Introduction

The Corporate Finance-I is an introductory course in finance area. The students are introduced to the financial management decision making process. The course is designed for a general management graduate, who can comprehend the role and function of the chief finance officer of a corporate setup. The course includes the basic topics of finance, like time value of money, Indian financial system, risk and return estimation, raising capital and investment of free cash. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Intended Learning Outcomes:

- How the financial management framework works?
- Role and functions of a CFO
- What is the worth of time in financial decision making process?
- How a country's financial system works?
- How to take stock investment decision from risk and return prospective?
- Basic understanding of capital investment process

Course Contents:

- **Introduction to Corporate Finance & Financial Environment:** Understanding the Finance function, Financial Manager's role, Shareholders wealth maximization, agency cost/theory. Significance of Environment, social and corporate governance (ESG) aspects in corporate financial management practices. Overview of Indian financial system; stock market operations- both cash & derivative market
- **Time Value of Money-** Importance of TVM in financial decision making, present value, future value estimations- use of excel functions in value estimations
- **Valuation of Stocks and Bonds-** how common stocks are valued- dividend discounting model, discounted cash flow model, bond valuation. Use of excel functions in estimation and analysis
- **Cost of capital Estimation-** component cost and weighted average cost of capital and opportunity cost estimation, yield to maturity (YTM) etc. Use of excel functions in estimation and analysis
- **Risk and Return:** How to measure historical and expected return, risk measurement, portfolio risk and return estimation, CAPM, Beta estimation and interpretations, Security Market Line. Use of excel functions in estimation and analysis
- **Leverage Analysis:** Operating leverage and financial leverage, EBIT-EPS relationship. Use of excel functions in estimation and analysis
- **Long term Investment Decision:** Cash Flow estimation, Capital budgeting concepts, cash flow estimation, methods of capital investment evaluation-NPV, IRR and other methods. Use of excel functions in estimation and analysis
- **Working Capital Management:** liquidity and profitability concept, working capital cycle, working capital estimation, introduction to the components of working capital- inventory, receivables, cash, sources of short-term finance.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Financial Management	Pandey, IM	Vikash	Latest
Reference Books				
1	Financial Management: Theory & Practice	Chandra, Prasanna	Tata McGraw Hill	Latest

2	Principles of Corporate Finance	Brealey, Myers, Allen, Mohanty	Mcgraw Hill Education	Latest
3	Financial Management	Khan & Jain	Tata McGraw Hill	Latest
4	Corporate Finance: Theory & Practice	Damodaran	Wiley	Latest
5	Modern Corporate Finance	Alan C Shapiro and S D Balbirer	Pearson Education	Latest
6	Corporate Finance	Stephen A Ross, R W Westerfield, Jeffrey Jaffe and R K Kakani	TMH Publishing	8 th Edition

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60104	Organization Theory	2	0	0	2

Introduction

Understanding and designing organization structure and appreciating the impact of size, strategy, technology, environment, power and culture on organizational dynamics and its effective functioning.

Intended Learning Outcomes

- Understand the evolution of organizations and conditions of organizational effectiveness
- Understand the components of organization structure and design and the typologies of organization structures
- Understand the impact of organizational size, technology and environment on organizational structure.
- Understand the different organizational design options along with the strengths and weaknesses.
- Discuss organizational functioning in varied environments
- Understand the concepts of organizational change and organizational culture.

Course Content

- Organization Theory and Evolution
- Dimensions of Organization Structure
- Organization Effectiveness
- Strategy and Organization Structure
- Size and Organization Structure
- Technology and Organization Structure
- Power-Control
- Organizational Design Options
- Bureaucracy
- Adhocracy
- Managing Environment
- Organizational Change
- Managing Organizational Culture and Organizational Evolution

4. Textbook and Reference Books

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
	Organization Theory	Robbins, S. and Matthew, M.	Pearson	3 rd
Reference Books				
1	Structure in Fives Designing Effective Organizations	Mintzberg, H.	PHI	3 rd
2	Organizational Theory and Design	Daft, R.	Cengage	13 th
3	Organizational Theory and Design	Jones, G.	Pearson	7 th

CourseCode	Name of the course	Credits			
		L	T	P	Total
OBM60804	Production and Operations Management – II	1.5	0	0.5	2

Introduction

Production and operations management (POM) deals with the design and operation of the system producing goods and services. It explores the ways operations managers approach and analyze strategic decisions in operations with a focus on designing products and processes, allocating scarce resources to strategic alternatives, and long-range capacity and facility planning. These operations functions help in achieving the long-range broader organizational objectives. Subsequent focus will be on medium and short-term planning and control activities. The pedagogy will strive to strike a balance between theoretical and practical perspectives in manufacturing and service organizations.

Intended learning outcomes

- Understand how forecasting is essential to supply chain planning.
- Evaluate demand using quantitative forecasting models.
- Apply qualitative and collaborative techniques to forecast demand.
- Understand sales and operations planning.
- Construct and evaluate aggregate plans that employ different strategies for meeting demand.
- Understand inventory costs and analyze how different inventory control systems work.
- Understand how the material requirement planning (MRP) system is structured.
- Analyze an MRP problem.
- Illustrate how supply chain planning is related to ERP.
- Explain work-center scheduling and apply scheduling techniques to the manufacturing shop floor.
- Analyze employee schedules in the service sector.
- Understand the six sigma approach to improving quality and productivity.
- Illustrate process variations and analyze process quality using statistics.
- Illustrate how lean concepts can be applied to supply chain processes.
- Analyze supply chain processes using value stream mapping.
- Understand and analyze waiting line problems.
- Understand the concepts of synchronous manufacturing & theory of constraints (TOC)

Course content

- Planning and Controlling the Supply Chain (Part-1). Aggregate Sales and Operations Planning, Disaggregation & Master production schedule (MPS)
- Planning and Controlling the Supply Chain (Part-2). Inventory Management, Material requirements planning & Introduction to Enterprise Resource Planning (from MRP to ERP), Operations Scheduling
- Quality Management & Lean Supply Chains. Just-in-Time and Lean Production, Quality Management – SPC & SQC (focus on Six Sigma), Service Process & Waiting Line Management for Service Improvement, Synchronous Manufacturing and Theory of Constraints (TOC)

Text and reference books

Sl.No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Operations and Supply Chain Management — TMH,	Chase, Shankar, Jacobs	TMH	15e
Reference Books				
1	Operations Management	Roger G. Schroeder	Irwin McGraw-Hill	
2	Operations Management :Theory & Practice	B.Mahadevan	Pearson Education	
3	Advanced Operations	RP Mohanty & SG	Pearson	

	Management	Deshmukh;		
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Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60502	Business Research Methods	2	0	0	2

Introduction

The course is intended to help the management students appreciate and use the basic tools and techniques of Business Research, in decision making. Emphasis will be given on conceptual understanding of the basic, useful tools and techniques and its meaningful applications

Intended learning outcomes

- *Understand* the meaning and concept of Business research and how it is different for different pure science research
- *Apply* the concepts of measurement in practical research projects through Questionnaire design and attitude management
- *Analyse and apply* sampling techniques in field research works
- *Use* Qualitative Research techniques in research work
- *Transform data into information*, and calculate and interpret basic descriptive statistics.
- *Apply and interpret* different types of quantitative methods of analysis.
- *Effectively communicate* research in a written report and presentation

Contents

- Module 1 (Introduction to BRM): What is Research Methodology- Different types of research: problem solving research, Applied and basic research, Scientific research, Research and the Scientific Method, Business Research, Good Research, Scientific Method in Good Research.
- Module 2 (Measurement Concepts): Measurement and scaling concepts; Levels of scale measurement. Attitude Measurement- Attitude as hypothetical construct, Attitude rating scales, Measuring Behavioural intension, Ranking, Other methods of attitude measurement, Selecting a measurement scale. Questionnaire Design- Questionnaire quality and design, Guidelines for constructing questions, Interactive and adaptive questions Layout and sequence of the questions, Administering the questionnaire.
- Module 3 (Sampling and Fieldwork): Sampling designs and sampling procedures – Reason for sampling, Sampling concepts, Sampling error, Types of sampling, Concepts of accuracy and Diversity in sampling. Determination of sample size – A review of Statistical Theory: The normal distribution, Population distribution, sample distribution and sampling distribution Central limit theorem, Sample size. Fieldwork – Nature of fieldwork, Good interviewing techniques and fieldwork management
- Module 4: (Qualitative Research): Focus Group Discussion, In Depth Interview techniques, Projective Techniques, Ethnography, New trends in Qualitative Research.
- Module 5: (Working with Data): Editing and coding data, Descriptive statistics
- Module 6: (Quantitative Statistical Analysis with SPSS and MS Excel), Hypothesis testing (one-tailed test, two-tailed test), t-test and Z-test, Cross-tabulation, ANOVA, Correlation and Regression.
- Module 7: (Writing a Research Report), Structure of research report, Presentation of report

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Business Research Methods	Zikmund , Carr , Griffin	Cengage	8e
Reference Books				
1	Marketing Research	Malhotra, Naresh K. & Dash, Satyabhusan	Pearson	-
2	Business Research Method	Cooper & Schindler	Mc Graw Hill	-
3	Essentials of Marketing Research	W Zikmund	Cengage	-

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60504	Quantitative Techniques – II	2	0	0	2

Introduction

Businesses are now increasingly using statistical techniques to convert data into information, which helps in appropriate decision making. This paper, in Decision Sciences area, prepares the students understanding and appreciating the essential concepts and applications, with focus on relevant tools and techniques.

Intended learning outcomes

To help management students appreciate the relevance and importance of the use of quantified/statistical facts, in the process of decision-making in the ever changing business environment. To discuss and apply basic statistical tools and techniques, which are useful in every area of business.

Course content

- Bi-Variate Study (Correlation & Regression)
 - Simple Regression Analysis
 - Inferences about Regression as a whole (using F test)
 - Multi-collinearity in Multiple Regression
 - Estimation using the Regression Line using Method of Least Squares; Standard Error of Estimate & its interpretation
 - Correlation Analysis: Multiple Regression, Coefficient of Determination,
 - Concept & applications of Multiple Regression (limited to interpretation of output/ results only; rigorous calculations to be excluded); computer (software, like SPSS) output analysis
- Nonparametric Tests; (Sign Test, Run Test, Rank-sum U test)
- Introduction to Operations Research (OR):
- Formulation of Problems (LPP); Solving LP problems by Graphical Method & problems using Excel Solver.
- Simplex method (maximization LPP solutions)

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Statistics for Management	Levin, Rubin et al	Pearson	2017 or Latest
Reference Books				
1	Quantitative Methods for Bus	Anderson, Sweeny et al	Cengage	Latest
2	Intro. Mgmt Science	Anderson, Sweeny et al	Cengage	Latest
3	Intro. Mgmt Science.	Hillier & Hillier	Tata McGraw Hill	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60703	Business Ethics and Corporate Social Responsibility	1.5	0	0.5	2

Introduction

Managing ethical issues both within an organization and in relationship to a range of external stakeholders, is important for the purposes of ensuring organizational integrity, enhancing organizational legitimacy, and managing risk. The concerns for protecting rights of minority, being fair to stakeholders, promoting and protecting common good and virtues, while creating greater good for the greater number has been growing. Increasingly, companies employ ethics and sustainability officers, or managers, to help implement their core values and strategy. In the last few years many companies embraced “sustainability” and begun reporting not just financial performance but social and environmental performance as well. Management graduates are expected to demonstrate awareness of ethical issues, distinguish ethical and unethical behaviours, and resolve ethical dilemmas.

Intended learning outcomes

- To understand concepts concerning approaches to ethics, individual moral development, corporate moral development, and sustainability.
- To apply the learned concepts to resolve ethical dilemmas.
- To analyse ethical issues in functional area of management and generate perspectives for ethical decision-making.
- To evaluate the current level of individual and corporate moral development and create development plans to achieve the desired level of moral development.
- To formulate and execute CSR plan in line with the prevailing regulations, duly aligned with the sustainability development goals and CSR theories.

Course content

- **Ethical theory and business:** the utilitarian approach; the rights approach; the fairness and justice approach; the common good approach; the virtue approach; spheres of executive responsibility; ethical dilemmas; and a framework for ethical reasoning.
- **Moral development:** individual moral development- moral sensitivity, moral reasoning, moral motivation & moral character); corporate moral development through development of organizational culture- amoral, legalistic, responsive, emerging ethical and ethical organizations.
- **Ethics and functional areas of business management:** ethics in human resource management; ethics in marketing management; ethical issues in finance and accounting; ethical issues in productions and operations management; ethical issues in emerging technologies.
- **Corporate responsibility:** CSR theories- instrumental theories, political theories, integrative theories and ethical theories; sustainability performance – environment sustainability, economic sustainability and social equity sustainability.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
4. Text Book				
No textbook is prescribed. Handout covering readings and case studies will be given.				
5. Reference Books				
1	Social Responsibilities of the Businessman	Howard R. Bowen	University of Iowa Press	2013
2	Business Ethics: Straight talk about how to do it right	Linda Klebe Trevino and Katherine A. Nelson	John Wiley & Sons, Inc.	5 th , 2011
3	Ethical Theory and Business	Arnold, Besuchamp & Bowie	Pearson	9 th , 2013
4	Business Ethics – Concepts and Cases	Manual G. Velasquez	Pearson	7 th , 2011
5	Business Ethics	William H. Shaw	Cengage Learning	8 th , 2013
6	Business Ethics – A Case Perspective	Ferrell, Fraedrich and Ferrell	South-Western College Pub	10 th , 2014

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60829	Business Analytics	2	0	0	2

Introduction:

Recently corporates from diversified sectors have been active in using data. The motivation for using data comes from a significant reduction in cost in storing and fetching data. Companies can generate and store huge volume of data through ERP implementation, Internet of things, social media and different audio/video encodings. The challenge is to browse through the huge volume of data and to create stories out of them, which would further be useful for increasing top-line of companies or mitigating risk. How much information can be extracted from a set of data is the major objective or challenge.

To assist corporates in taking data driven decisions it needs a knowledge base to explore and visualize data, to be able to create dashboards and make stories, and most importantly to present the technicalities in the embedded data to a non-technical audience. This course introduces to the various facets of data and its distributions. It opens the student to the applications of discrete mathematics, probability, and statistics in the area of data science. It introduces various plots to visualise and interpret data, which are the crux of decision science. Further it adds to the area of predictive analysis using basic models which could be steppingstone for further learnings and applications in analytics. The course will also introduce to the programming language R which is available as an open source.

Intended Learning outcome:

- Know the importance of big data in management and its properties

- Develop awareness to make business communication through data-driven information
- Should be able to explain natural processes by relating them to a certain distribution of data
- Able to understand and create statistical charts and tables for further use in dashboards
- Get exposure and have hands on experience in using the globally used statistical software- R
- Can explain the differences between descriptive and predictive analytics with use case scenarios

Course Contents:

- Introduction, Role of Data in Organization
- Data lifecycle. (Data source, data changes, processes, usage)
- Data representation forms (linear, exponentials, logarithmic)
- Various data types (numeric, categorical)
- Discrete mathematics
- Understanding distributions in Data
- Fundamentals of probability (Basic Idea, expectation, probability calculus, conditional probability)
- Probability distribution function (uniform, normal, binomial, chi-square, student's t distribution)
- Central limit theorem, central tendency of data concepts
- Data visualization concepts; (scatter plot, pie chart, histogram, bar chart, boxplot, density plot, area plot etc)
- Data visualization using R/ Excel
- Concepts of data cleaning; importance in analytics
- Time series Data and Regression Models
- Forecasting Technique
- Introduction to predictive analytics
- Supervised vs. unsupervised learning (concepts only)

4. Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
4. Text Book				
Course material will be provided including online contents as and when the class continues.				
5. Reference Books				
1	Business Analytics: Data Analysis and Decision making	S Christian Albright & Wayne L. Winston	Cengage	5 th
2	Storytelling with Data: A Data Visualization Guide for Business Professionals	Cole Nussbaumer Knaflitz	John Wiley & Sons	Latest
3	Business Analytics	James E Evans	Pearson	3 rd
4	Data Science & Big Data Analytics, Discovering, visualizing and presenting Data	David Dietrich, Barry Heller, & Beibei Yang	Wiley	Latest
5	R for Everyone, Advanced Analytics and Graphics	Jared P. Lander	Addison Wesley	1 st
6	R for Data Science, Import, Tidy, Transform, Visualize, and Model Data	Hadley Wickham & Garrett Grolemund	O'REILLY	1 st
7	Ggplot2, Elegant graphics for data analysis	Hadley Wickham	Springer	Latest
8	Let Us Python	Yashavant Kanetkar	BPB Publication	Latest

SEMESTER III

Sl. No.	Course Code	Subject	L	T	P	Total Contact Hours	Credit
21	OBM60704	Strategic Management	2	0	0	30	2
Semester Credits The semester will also have 16 credits in 8 elective courses							2

Area: Strategic Management

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60702	Legal Aspects of Business	2	0	0	2

Introduction

Business executives have an obligation to create value for their stakeholders, while confirming to basic rules of society, both those embodied in law and those embodied in ethical custom. Law, in one form or another, permeates modern society at all levels of government—local, state, federal, and in limited circumstances, international. Consequently, today's businesspersons and executives benefit by developing a working knowledge of law. In the business world, we may not always know what the substantive law is; but if we can spot the issue (before it becomes a problem), we will be able to raise it within the organization, with outside counsel, to find answers. Businesspersons who are adept at issue-spotting are invaluable to their organizations.

Intended learning outcomes

The following are the intended learning outcomes of the course, aligning with the programme outcome- Business Environment and Domain Knowledge (BEDK):

- Gain understanding of substantive law- law that creates and controls the rights and duties of parties.
- Gain understanding of procedural law - law that creates and controls the process of enforcing the rights and duties under substantive law.
- Develop issue-spotting skills- spot the issue (hopefully before it becomes a problem), to raise it with the appropriate persons within the organization, with outside counsel, or find the answer by self.

Course content

- Introduction and overview, scope & subject matter of legal environment.
- Indian contract act, 1872: offer & acceptance; competence of the parties to contract; objects, consideration, contingent & quasi contracts, performance, termination, breach of contracts & remedies; void, voidable, illegal & unlawful agreements; guarantee & indemnity; contract of agency
- Sale of goods act, 1930: contract of sale, price; conditions, warranties; rights & duties of seller & buyer; rights of an unpaid seller, remedies of breach of contract; auction sale.
- Arbitration & conciliation act, 1996: legal provisions relating to arbitration & business contracts; provisions relating to conciliation,
- Indian companies act 2013: , nature, types and characteristics of a company; incorporation of a company; lifting of corporate veil; MOA & AOA; shares & share capital; corporate governance; accounts & audit;
- Negotiable instruments act meaning, nature & types of negotiable instruments; law relating to negotiable instruments; rights & liabilities of paying banker & collecting banker.
- Overview of Consumer Protection Act, 1986
- Overview of Information Technology Act, 2000

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Legal Aspects of Business	Kumar, Ravinder	Cengage	4th
Reference Books				

1	A Manual of Business Law	S N Maheshwari and S K Maheshwari	HPH	2011
2	Legal Aspects of Business	R. Kumar	Taxman Publications	2015
3	The Companies Act, 2013	Ministry Of Corporate Affairs		2015
4	Legal Aspects of Business	Daniel Albuquerque	Oxford Publications	2015
5	Legal Aspects of Business	Akhileswar Pathak	McGraw Hill	7th, 2019
6.	Elements of Mercantile Law	N. D Kapoor,	S. Chand	4 th , 2014

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62702	Business Communication	1.5	0	0.5	2

1. Introduction

There is growing evidence that effective communication is the key for keeping an enterprise, as a system of individuals, working together for winning in the market place. In a volatile, uncertain, complex and ambiguous world, an organization needs the ability to respond fast. In order to be able to respond fast, effective communication is of prime importance at any organization today. It supports open interaction with a free flow of information, managing organizational communication processes, and creating an open and adaptive communication system. Accordingly, management graduates are expected to be proficient in written and oral communication.

Intended learning outcomes

- Apply the six fundamentals of effective writing (focus and coherence, organization and structure, development of ideas, voice, word choice, and conventions)
- Demonstrate the ability to write effectively in a variety of modes, including business proposals, incident reports, and policy documents
- Use the principles of oral communication to make presentations supported with audio-visual aids and deliver prepared as well as extempore speech.
- Develop structured resume and covering letter.

Course content

- **Module 1:** An introduction to business communication – the process, and the barriers. Types, channels, directions of Business Communication in an Organizational Communication Network.
- **Module 2:** Oral Communication. Understanding the importance of non-verbal communication; Kinesics, Proxemics, Paralanguage; Other minor components; Active listening; Improving public speaking skills; Designing structured presentations; Using Visual Aids effectively during Business Presentations; and Engaging in vibrant business-related conversations.
- **Module 3:** Written Communication – I. Enhancing meeting productivity, preparing an agenda, notifying participants, and writing the minutes.
- **Module 4:** Written Communication – II. Organizing and composing routine, good news, bad news and persuasive messages, Writing business letters, Writing business reports and proposals, Creating concise memos, circulars and office orders, and Effective Email writing
- **Module 5:** Written Communication – III. Tailoring the perfect resume as an effective self- marketing tool and Drafting cover letters

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Essential Strategies for Twenty-first Century Managers	Shalini Verma	Vikas Publications	2nd

Reference Books				
1	Business Communication Today	Bovee, Thill and Chaturvedi	Pearson Education	9 th , 2008
2	Basic Business Communication	Lesikar and Flatley	Tata McGraw-Hill	9 th , 2001
3	Speaking and Writing for Effective Business Communication	Francis Soundararaj	Macmillan India Ltd.	2015
4	Contemporary Business Communication	Scot Ober	Biztantra	6 th , 2006
5	Basic Managerial Skills For All	E. H. McGrath, S. J.	PHI	9 th , 2011

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62703	Business Ethics and Corporate Social Responsibility	1.5	0	0.5	2

Introduction

Managing ethical issues both within an organization and in relationship to a range of external stakeholders, is important for the purposes of ensuring organizational integrity, enhancing organizational legitimacy, and managing risk. The concerns for protecting rights of minority, being fair to stakeholders, promoting and protecting common good and virtues, while creating greater good for the greater number has been growing. Increasingly, companies employ ethics and sustainability officers, or managers, to help implement their core values and strategy. In the last few years many companies embraced “sustainability” and begun reporting not just financial performance but social and environmental performance as well. Management graduates are expected to demonstrate awareness of ethical issues, distinguish ethical and unethical behaviours, and resolve ethical dilemmas.

Intended learning outcomes

- To understand concepts concerning approaches to ethics, individual moral development, corporate moral development, and sustainability.
- To apply the learned concepts to resolve ethical dilemmas.
- To analyse ethical issues in functional area of management and generate perspectives for ethical decision-making.
- To evaluate the current level of individual and corporate moral development and create development plans to achieve the desired level of moral development.
- To formulate and execute CSR plan in line with the prevailing regulations, duly aligned with the sustainability development goals and CSR theories.

Course content

- **Ethical theory and business:**the utilitarian approach; the rights approach; the fairness and justice approach; the common good approach; the virtue approach; spheres of executive responsibility; ethical dilemmas; and a framework for ethical reasoning.
- **Moral development:**individual moral development- moral sensitivity, moral reasoning, moral motivation & moral character); corporate moral development through development of organizational culture- amoral, legalistic, responsive, emerging ethical and ethical organizations.
- **Ethics and functional areas of business management:**ethics in human resource management; ethics in marketing management; ethical issues in finance and accounting; ethical issues in productions and operations management; ethical issues in emerging technologies.
- **Corporate responsibility:** CSR theories- instrumental theories, political theories, integrative theories and ethical theories; sustainability performance – environment sustainability, economic sustainability and social equity sustainability.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
4. Text Book				
No textbook is prescribed. Handout covering readings and case studies will be given.				
5. Reference Books				
1	Social Responsibilities of the Businessman	Howard R. Bowen	University of Iowa Press	2013
2	Business Ethics: Straight talk about how to do it right	Linda Klebe Trevino and Katherine A. Nelson	John Wiley & Sons, Inc.	5 th , 2011
3	Ethical Theory and Business	Arnold, Besuchamp & Bowie	Pearson	9 th , 2013
4	Business Ethics – Concepts and Cases	Manual G. Velasquez	Pearson	7 th , 2011
5	Business Ethics	Willam H. Shaw	Cengage Learning	8 th , 2013
6	Business Ethics – A Case Perspective	Ferrell, Fraedrich and Ferrell	South-Western College Pub	10 th , 2014

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62704	Strategic Management	1.5	0	0.5	2

1. Introduction

Strategy is an integrated set of choices that uniquely positions the firm in its industry to create sustainable advantage and superior value relative to the competition. Every management staff in an organization needs to understand how s/he as an individual, his/ her function, and team contribute to creating superior value. Students will learn a number of frameworks and models to better understand and analyse the macro-environment, the industry environment, firm level resources and strategy formulation and implementation at functional, single business and multi-business level.

Intended learning outcomes

- Understand key concepts/ frameworks such as, a) strategic direction, b) opportunities and challenges- where to play, c) key success factors, d) competitive advantage, e) dynamic capability, f) the Delta Model- how to win, and f) management systems for strategy execution.
- Apply the learned concepts to develop, a) strategic direction, b) appropriate where-to-play profile, c) appropriate how-to-win profile, e) capabilities, and f) appropriate management systems.
- Analyse given contexts/ case studies to identify drivers of firm performance.
- Evaluate alternatives for improving firm performance and select the most appropriate choice(s)
- Create performance enhancement plan for a business entity, capturing where-to-play and how- to-win.

Course content

- **Overview and fundamental dimensions of strategy:** Ten schools of thought, five Ps of strategy, why organizations need strategy, creating value, managing imitation and managing perimeter.
- **Winning aspirations:** Vision, mission, core values, goals and objectives.
- **Where to play:** Product/ service/ solution categories, consumer segments, channels, vertical scope of firms and horizontal scope of firms.
- **Competitor analysis:** Competitors' response profile- current strategy, capabilities, future goals and assumptions.
- **How to win:** best products- cost leadership, differentiation & dual advantage; total customer solutions- redefining customer experience, managing horizontal breadth & customer integration; and system lock-in-

restricted access, dominant exchange & managing proprietary standards.

- **Firm's capabilities:** Resources, organisational capabilities; profit earning potential; developing resources & capabilities required capabilities to create and sustain competitive advantage and dynamic capabilities.
- **Strategy implementation:** Systems, structures, and processes required to support firm's positioning choices.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
No textbook is prescribed. Handout covering readings and case studies will be given.				
Reference Books				
1	Economics of Strategy	Besanko, Dranove, Shanley & Chaefer	John Weley & Sons	7th (2015)
2	Playing to Win: How Strategy Really Works	A.G.Lafely and Roger L. Martin	Harvard Business Review Press	2013
3	Competitive Advantage	Michael E. Porter	Free Press	1st (1985)
4	Fundamentals of Business Strategy	Edited By Augier & Teece	Sage	1st (2008)

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62705	Blockchain Applications in Business	1.5	0	0.5	2

Introduction

Blockchain is touted as the new internet. It is in the same stage of development and capability of disruption as the internet was in the 1990s. It is a digital platform where information and assets can be shared. It is rapidly changing the way markets and organizations function. As per latest reports released by LinkedIn, 1 out of 10 jobs announced in the blockchain niches posted from India. Blockchain developers, smart contract developers, and blockchain generalists are in high demand. Several conglomerates and leading players across sectors in India have announced large blockchain projects to tackle different use cases. Even the country's Government think tank, NITI Aayog has announced IndiaChain – an indicator of the immense opportunities for growth in this sector in the nation.

Intended Learning Outcomes

- Acquire comprehensive knowledge of Blockchain and its underlying technology
- Understand various use cases of blockchain in business.
- Use open source tools to create a blockchain use case.
- Be able to view the topics of this course in a larger business/economic perspective

Course Content

- **Introduction to blockchain:** Evolution of Blockchain, Types of Blockchain
- **Blockchain Technology and frameworks:** Introduction to popular Blockchain technologies, Smart Contracts & DApps, Identity and Anonymity on Blockchain, Governance and Consensus
- **Use cases of blockchain in business applications:** Blockchain and Cryptocurrency (Bitcoin, Ethereum), Blockchain and NFT, Blockchain in Supply Chain and Manufacturing, Blockchain in Fintech, Blockchain in Healthcare, Blockchain in Government and Public Service
- **Hands-on exercises on blockchain,** Hyperledger and Ethereum – concepts and application, Hyperledger Composer

Text Book(s)

No prescribed textbook. Reading materials will be shared by faculty

2. Reference Book(s)

Title	Author(s)	Publisher	Edition
Blockchain Revolution	Don Tapscott Alex Tapscott	Penguin Random House UK	1 st Edition
A practical Guide to Developing Business, Law and Technology Solutions	Joseph J. Bambara, Paul R. Allen,	McGrawHill	1 st Edition
The Business Blockchain	Vitalik Buterin Mougayar, William	Wiley	1 st Edition
Applications of Blockchain Technology in Business_Challenges and Opportunities	Mohsen Attaran, Angappa Gunasekaran	Springer International Publishing	1 st Edition
Business Transformation through Blockchain (Vol I & II)	Horst Treiblmaier, Roman Beck	Palgrave Macmillan	1 st Edition

Area: Business Economics

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60401	Managerial Economics – I	2	0	0	2

Introduction

The course is designed to serve as a foundation of economic decision making that forms the basis of almost all disciplines of management. Decisions taken by individuals, businesses and government or regulator, and a framework to evaluate those decisions is the subject matter of this course. Different factors underlying the behaviour of firms under various market structures are studied and the resulting market outcomes are tested through case studies. The course also incorporates insights on the impact of asymmetric information and uncertainty on decisions and outcomes. In order to make the course application oriented solution of various real life cases are included in the pedagogy.

Intended Learning Outcomes

- To develop an understanding of different types of economic agents and their economic motives, and how the self-interest of these agents lead to the formation of markets.
- To develop a theoretical understanding of economic concepts like production functions, cost structure, firm and market structures, and the significance of the economic assumptions underlying the theoretical models.
- To develop an understanding of the implications on prices and welfare of different market structures, the causes of market failures, and the need for regulation.
- To develop the capacity to relate to the Indian economic environment -- how do certain markets work, role of information and uncertainty in economic decision making.
- To be able to apply the knowledge in solving real life problems during the period of SIP and placement.

Course Contents

Module 1: How the Economy Works? (Household/ Firms/ Co-operatives/Government), Economic Decision Making highlighting the three central problems of our economy. Theory of Demand: Consumer Behaviour: Demand-Supply Analysis and Elasticity Analysis and Applications of Elasticity for Demand and Supply; Demand Forecasting. Graphing using Excel.

Module 2: Production theory & Analysis: Dealing with Short run and Long run behaviour; Cost Theory & Analysis: Linkage between cost, revenue and output through optimization. Use of Calculus and Derivatives in Cost Analysis. Graphing using Excel.

Module 3: Market Structure & Market Morphology: Price and output determination under Perfect and Imperfect Market in both short run and long run; Pricing Strategies in Markets, Perfect or Fair Competition, Monopoly (Barriers/ Restrictions/exclusive rights or ownership), The three degrees of Price Discrimination. Case Insights. Competition in the Indian Mutual Fund Market.

Module 4: Monopolistic competition: Price & output decision under monopolistic competition. Oligopoly-Perfect & Imperfect Oligopoly, Cartels, Price leadership.

Application of game theory to determine optimal outcome under oligopoly market. Case Insights. Case on OPEC as a Cartel. Price war between OPEC vs. Non-OPEC Nation as per the current scenario.

Module 5: Market Imperfections: Market failure, Imperfect & asymmetric information; & Decision under uncertainty.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Principles of Microeconomics	N. Gregory Mankiw	Cengage	7 th Edition
Reference Books				
1	Economics for Business & Management	K Alec Chrystal & Richard G. Lipsey	Oxford University Press	Latest
2	Managerial Economics in a Global Economy	Dominick Salvatore	McGraw Hill	3 rd Edition
3	Managerial Economics	Paul G Keat, Philip K Y Young and Sreejata Banerjee	Pearson	6 th Edition
4	Economics	Paul A Samueson and William D Nordhaus	McGraw Hill	19 th Edition

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60403	Managerial Economics – II	2	0	0	2

Introduction

The course is designed to equip the students with tools to understand and relate to the economic reality around them through an understanding of various macroeconomic concepts and to use the tools to evaluate the implications of the government policy on businesses, sectors, industries and the economy. In order to make the course application oriented solution of various real life cases are included in the pedagogy.

Intended Learning Outcomes

- To develop an understanding of the macroeconomic aggregates such as output, unemployment, inflation, productivity and the major challenges associated with the measurement of these aggregates.
- To develop a theoretical understanding of the role of the central bank and money supply, linkages between financial markets and the real economy, and how these linkages influence the impact of economic policies over different time horizons.
- To enable students understand the basics and rationale of Fiscal and Monetary policy instruments and their role in policy making and during the phases of the business cycles
- To develop an understanding about the international linkages of an open economy, international capital flows, balance of payments, and the determination of exchange rates.
- To develop the capacity to relate the theoretical concepts with the real world with reference to the Indian economy. Different periods of Indian growth and development will be studied to highlight the structural aspects of growth, issues and prospects of the Indian economy.
- To be able to apply the knowledge in solving real life problems during the period of SIP and placement.
- To be able to design and formulate models based on their learning.

Course Contents

- **Module 1:** Macroeconomics Issues, Concepts & Model Building, National Income Accounting; Income & Spending; Money Interest & Income. Key Concepts- Gross Domestic Product. Calculation of Gross Domestic product. Difference between GDP and GNP. Measuring GDP through various approaches- GDP according to product approach. GDP according to expenditure approach. GDP according to income approach. Real Vs. Nominal GDP, GDP deflator Product-income- expenditure identity
- **Module 2:** Product & Money Market Analysis. Theory of National Income Determination; The Multiplier Effect. Aggregate Demand; Aggregate Supply function; Money Market: Theory of Money Supply, Various Measures of Money Supply- M0, M1, M2, M3, M4.
- **Module 3:** Role of Central and Commercial Banks as Credit Mechanism. The Central Bank, money and credit. The money stock and the money multiplier. The money multiplier, high powered money and adjustment. The role of Commercial Bank as a Credit Creator. The process of Credit creation by individual bank and multiple banks. Case insights on Current COVID-19
- **Module 4:** Monetary & Fiscal Policy. Quantitative and Qualitative tools of Credit Control – CRR, SLR, Repos, RRR, MSF, Margin Requirements etc. to counter business cycles. Use of Fiscal tools to combat cyclical downturns. Fiscal Math using Excel. Case Insights on current COVID-19.
- **Module 5:** The Dynamics of Inflation & Unemployment. Inflation and aggregate supply curve. Dynamics of aggregate demand. Measurement CPI vs. WPI. Trade-off between Inflation & Unemployment-Phillips Curve Short Vs. Long run
- **Module 6:** Exchange rate Determination & Indian Economic Overview, Budget Analysis. Adjustment under fixed and flexible exchange rate. Exchange rate changes and Trade adjustments. Monetary approach to the Balance of Payments, PPP Approach, Interest Rate Parity Approach. Case Insights on current market crisis. Growth vs. Development; Role of Agriculture, Industry & Service Sector in Indian Economy; Economics Reforms. Analysis of the current Union Budget.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				

1	Macro Economics, Policy & Practices	Frederic S. Mishkin	Pearson	Second Edition
Reference Books				
1	Macro Economics	Andrew B. Abel & Ben Bernanke	Pearson	Latest edition
2	Macro Economics	Oliver Blanchard	Pearson Education	Latest edition
3	Macro Economics	Rudiger Dornbush, Stanley Fisher and Richard Startz	McGraw Hill Education	Latest edition
4	Macroeconomics Theory & Policy	D.N Dwivedi	McGraw Hill Education	5 th edition
5	Economic Policy Reforms and the Indian Economy	by Anne O. Krueger	University of Chicago Press	
6	Indian Economy since Independence	Uma Kapila	Academic Foundation	Latest edition

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62219	Industrial Economics & Financing	1.5	0	0.5	2

Introduction

The primary objective of this course is to develop an understanding on various aspects of industrial organization and its mode of financing. It starts by examining the internal structure of firms. It then moves on to the analysis of various aspects of strategic interaction between firms and the determinants of industrial structure. Finally, it discusses the various sources of industrial financing and lays out policy in the context of industrial policies and regulation. The emphasis will be throughout on understanding how the theoretical tools can be used to analyse real world issues. The theory will be confronted against empirical evidence, and its implications for public policy and industrial strategy will be discussed. It deals with the application of those concepts in the process of business decision making in the broad macroeconomic environment. In order to make the course application-oriented solution of various real life cases are included in the pedagogy.

Intended learning outcomes

- To enable the student to understand the structure of Industrial organisation and evaluate the IPR of a state.
- Understanding and analysing the determinants of the size and structure of firms and its implications
- To enable the students in acquiring managing and governance skills, enriching their understanding of the institutional framework of business, and improve their analytical ability.
- Apply analytical models of firm behaviour and strategic interaction to evaluate various business practices
- Acquaint students with the legal dimensions and financing in industry.

Contents

Module-1 Framework of Industrial Organization & IPR

- Meaning, Nature, Scope, Need & Significance of the Study of Industrial Organisation.
- The growth of Firm & its determinants
- Concept and organization of a firm ownership control and objectives of the firm
- Conceptual framework & some empirical findings
- The behavioural theory of firm
- The Industrial policy and the business decisions firms make within the market framework.
- Case Insights- Measuring the determinants of firm growth in Manufacturing Industry

Module-2 National Industrial Classification

- Broad classification of Indian Industries and its basis of classification
- Significance of each cog in the wheel of developing India

- Variables in Multifactor Productivity Database – The Heckman model
- Concordance of Study Industries (minimal) with different NICs (National Industrial Classifications)
- Case Insights

Module-3 Industrial Locational Analysis - Network Effect & Measuring Productivity & Efficiency

- Determinants of Industrial location.
- Approaches to Industrial Location Analysis
- Theories of Industrial Location, Weber, Sargent Florence
- Industrial Imbalance, Causes and Measures.
- Technology, changing scales of production, network effects and formation of industrial clusters.
- Measuring Concentration Ratio- HHI Index, Entropy, Lerner, HOR, GIN Index
- Case Insights- Market Concentration in Indian Manufacturing Sector: Measurement Issues.
- Productivity & Profitability - Norms and Measurement
- Factors affecting Productivity and Capacity Utilization
- Measures required for Improving Productivity and Efficiency.
- Leontief I-O Matrix

Module-4- Industrial Financing- Institutions and Instruments

- Meaning, Scope, Importance of Industrial Finance
- Sources of Industrial Finance- Internal self-financing, Equity vs Debt (Working Capital Loan, Term Loan, Debentures), Hybrid Instruments, Lease Financing, Money Market, Commercial Papers, Trade Finance, ECGC, Foreign Capital
- Funding mix in Indian economy- Banking system debt (ECBs and bonds)
- Role of Commercial Banks and NBFCs
- Role of Foreign Direct Investment, Foreign Institutional Investment,
- Role of External Commercial Borrowings, FCCB, ADR , GDR
- Role of Financial Institutions – Insurance companies, Pension Funds, SIDBI, SFCs, etc.
- Masala & Maharaja Bond. Samurai Bond, Dim sum Bond
- Venture Capital, Angel Investing and Alternate Investment Fund(AIF)
- Projects Assigned-
- Measuring the Concentration Ratio of Indian Aviation Industry/Telecom Sector
- Market Concentration in Indian Media & Entertainment Industry: Measurement Issues.
- Measuring efficiency, effectiveness and overall performance in the banking sector
- Long-run factors of firm growth: A study of Indian Firms
- Project Report on Raising Equity capital through ADR & GDR

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Industrial Economics	RR Barthwal	New Age Publication	3 rd edition
Reference Books				
1	Industrial Economics: Economic Analysis & Public Policy	Stephen Martin	Wiley & Sons	2 nd Edition
2	Industrial Economics	D.Aay & D.J Morris,	Oxford University Press	10 th edition

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62401	Sustainable Development	1.5	0	0.5	2

Introduction

The aim of the course is to give an understanding of the key challenges and pathways to Sustainable Development (SD) – economic development that is also socially inclusive and environmentally sustainable. The challenge of SD boils down to the fundamental question: how the world economy can continue to develop in a way that that meets the needs of the present without compromising the

ability of future generations to meet their own needs. The course describes the complex interactions between the world economy and the Earth's physical environment. Ecological processes and constraints (climate, disease ecology, physical resources such as soils and energy sources, topography and transport conditions) significantly shape the patterns of economic development, demography, and wealth and poverty. At the same time, human activities (farming, land use, urbanization, demographic change, and energy use) change the physical environments, increasingly in dangerous ways. The course offers a broad overview of the key challenges and potential solutions to achieve sustainable development in the 21st century.

Intended Learning Outcomes:

- Understand the basic concept of Sustainable Development (SD), the environmental, social and economic dimensions.
- Know the history of the SD idea.
- Be able to discuss the conflicts which are involved in the SD concept on the national as well as on the global scale.
- Be familiar with potential strategic options for SD
- Understand the SD challenge for companies, their responsibility and their potentials for action.

Course Content

- **Introduction to Sustainable Development and its history:** The challenges we face -- a case for sustainable development. How did we get here? A historical perspective on development and its outcomes. SD for business and management; responsibilities of government and business. Sustainable business strategies.
- **Economic development in a historical perspective:** How do we measure economic development and how it varies around the world? Define the dimensions of inequality and measures of well-being. A short history of economic development from industrial revolution to globalization with a focus on technology and its diffusion around the world.
- **Basic Concepts, Strategies and Measurement:** Develop different dimensions of SD goals, targets and measurement metrics, as well as different strategies forming part of government policy to meet SD goals.
- **Innovation and Green Growth:** Limitations of the GDP growth as a leading parameter of development. What is Green Growth and how it has brought focus on environmental issues? How has the change in development perspective impacted the greening of technology and innovation
- **Poverty and Inequality:** Why did some countries advanced while others remained in poverty? The role of physical geography: transport, energy, disease, crops; the role of culture: demography, education, gender; the role of politics. Which countries are still stuck in poverty? The Millennium Development Goals (MDGs) and the end of extreme poverty.
- **Governance, Education and Health:** The ethics of wealth, poverty, and inequality. Human Rights and divided societies. Gender inequality and solutions. A life-cycle approach to human development. The rising returns to education and the supply response. Social mobility and the role of higher education in sustainable development. The human right to health. Poverty and disease; designing and financing a primary health system in Low-Income Countries.
- **Sustainable Cities and Curbing Climate Change:** What makes a city sustainable? Smart infrastructure, urban resilience and planning for sustainable cities. The basic science of climate change. The consequences of climate change and its mitigation. Policies and global cooperation for climate change
- **Biodiversity:** What is biodiversity? Threats to biodiversity -- Oceans and fisheries; deforestation. International dynamics
- **Company Perspectives:** The role of the corporate sector in advancing sustainable development. Corporate Social Responsibility as a tool for change. Voluntary policies to support green goals -- renewable energy, recycled papers, work from home, etc.
- **Government Policy in India to Meet SD Goals:** SD defined in the Indian context and the policy constraints given the country's developmental goals. Indian position at Rio and on environmental commitments; and role of Niti Ayog to develop and monitor programmes to meet SD Goals. Mapping of government programmes to each SD goal and targets for 2030.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
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Text Book				
No textbook is prescribed. Course handout will be given by the instructor.				
Reference Books				
1	The Age of Sustainable Development	Jeffrey Sachs	Columbia University Press	2015
2	Our Common Future	Report of The World Commission on Environment and Development	Oxford University Press	1987
3	Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty,	Esther Duflo & Abhijit Banerjee	Penguin	2011
4	Towards Green Growth	OECD	Oecd.org (download available online)	2011

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62402	Macroeconomic and Financial Challenges: Covid 19 and beyond	1.5	0	0.5	2

Introduction

The entire world is now in the clutches of the uninvited guest that have taken shelters into our homes and hearth. While COVID-19 is having a devastating impact on the global economy it's quite but pertinent to include it as a part of a course in major B-Schools. An insightful and up-to-date course that addresses the challenges presented by current economic and financial markets events against the backdrop of COVID-19 and beyond.

The deadly virus has not only infected millions across the globe but has also been responsible for tens of thousands in fatalities. In its wake, the virus has had a devastating impact on the global economy due to government mandated lockdowns and disruptions in global trade. This course is designed to explore the intricacies of the inter-locked systems of production, consumption, trade and finance, and how such systems can quickly unravel due to an external shock, the Covid 19 pandemic in particular. This course will offer a mix of lectures and student-led discussions involving KSOM faculty and industry experts and expert external speakers. A key feature of this course is the focus on current events.

Intended Learning Outcome

- Cultivate a good grasp over the up-to-date economic theories that interpret current events
- Understand the role of the US dollar in the current international monetary system and how it affects vulnerabilities in emerging market economies.
- Understand how the current COVID-19 crisis is affecting the conduct of monetary and fiscal policies and its geopolitical implications.
- Achieve an understanding and analysis of the economic linkages between current macroeconomic events.
- Analysing the economic and financial implications of the current pandemic situation in India and its fragility.
- Gain a greater understanding of China's role in the global economy and its impact of its policies on ROW.

Course Content

- **Module-1-** The Pandemic Covid -19 – Meaning, Nature and Beyond
 - The current COVID-19 crisis and its differences with the Global Financial Crisis of 2008- 2009.
 - The macroeconomic and geopolitical implications of the Covid-19-induced recession along with the potential risk of deflation or stagflation.
 - The impact of Covid-19 on the ongoing balkanisation of global supply chains
 - The ongoing technological disputes between US and China, with repercussions for cyber risk and strategy

Module-2- Paradox of Pandemic

- Policy responses to the macroeconomic and financial fallout
- Cost-benefit analysis of fiscal, monetary and quasi-fiscal responses
- Long-run implications: public debt, central bank independence, inflation, recession
- Macroeconomic impact on various sectors viz. Primary, Secondary & Tertiary
- Measures undertaken for Flattening the Curve
- Emerging market vulnerabilities in the Covid-19 environment, the problem of dollar-funding and the global role of the Fed.
- Are advanced economies trapped in world of low growth and low interest rates?

Module-3- Financial Implications of the Pandemic

- Effect of pandemic on financial performance of Firms
- Strain on supply chain financing to small business
- Stock market spill over effect on investments into unlisted entities
- Impact on liquidity and capital structure of business conglomerate
- Banks and NBFCs responses to the financial fallout
- Transformations in banking operations and emergence of Fin-techs

Module-4- Behavioural dimensions of investment of this Pandemic and its implications on market

- Behavioural aspects of investing in this Pandemic situation
- Investor Behaviour, Market Outcome, BB & K Five way model, Value Investing.
- External factors and investor behaviour: Fear & Greed in financial market, emotions and financial markets: geomagnetic storm, statistical methodology for capturing the effects of external influence onto stock market returns.
- Incorporating Behavioural Finance in practice.

Module 5- Global Issues& Future Ahead

- Spill overs via Supply Chains, Multinationals, Markets, Central Banks - Emerging markets vs Developed economy policy trade-offs,
- Role of IMF and World Bank
- Planning for Future - Pandemic and Climate Stress Tests - Investing in Robustness against Low-Risk, High-Cost shocks - Implications for Resilience in Health, Business, Economy, and Policy.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
No textbook is prescribed. Course handout will be given by the instructor.				
Reference Books				
Various reports from McKinsey, Boston Consulting Group, Harvard Business Review, Deloitte, etc.				

Area: Marketing Management

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60301	Marketing Management – I	2	0	0	2

Introduction

Marketing is one of the fundamental functions of any firm. Business environment is always in a state of dynamism. This necessitates changes in marketing strategies adopted by firms that have to be aligned along the changing contours of market. Marketing decisions involve both strategic and tactical level activities of developing products and services with an emphasis on creating customer value and building customer relationships. The course develops concepts and skills necessary for taking marketing decision-making and illustrates how various decision-making tools and strategic frameworks apply to actual business scenarios. The goal of this course is to develop a disciplined process for addressing marketing issues and problems in a variety of settings, and to give students the tools and background necessary to think through marketing problems. The aim of the course is to develop these skills in a deep-rooted manner so that students retain the marketing skills learnt through the course.

Intended learning outcomes

13. Define markets and its types
14. Understand the concepts of marketing and their evolution
15. Relate the strategic frameworks developed to marketing function
16. Understand the macro and micro factors of marketing environment
17. Explain the marketing process
18. Develop a marketing plan
19. Understand the consumer buying behaviour and the theories underlying the behaviours
20. Relate buying behaviour with respect to organizational buyer
21. Understand the customer relationship management
22. Understand the marketing research objectives and techniques
23. Understand the fundamentals of Segmentation, Targeting & Positioning
24. Understand the concept of Customer Relationship Management, Customer Lifetime Value

Course content

- **Module 1: Core concepts of Marketing:** Objectives and Definitions of marketing, Fundamental Marketing concepts: Needs and Wants and Demands, Orientations to the market – Concepts, Marketing Myopia, and Differentiating between the three with illustrations.
- **Module 2: Understanding the Strategic Planning Models:** Strategic Planning Models- Business Unit Planning, Value Chain Analysis, Decision making through: SWOT Analysis, Porter's Generic Strategies and 5 forces, BCG Matrix, and Ansoff's grid.
- **Module 3: Marketing Environment:** Importance of environment scanning, Understanding Macro Environment variables/components, Understanding Micro Environment variables/components, and Differences between macro & micro variables
- **Module 4: Consumer Buying Behaviour:** Define Consumer & its types, Buyer Roles, Theories of Consumer decision making (Buying Situation), Factors influencing Consumer Behaviour, Consumer buying processes & its stages, Behaviour Key Psychological Processes, Consumerism
- **Module 5: Organizational Buying Behaviour:** B2B- Business Market vs. Consumer Market, Stages in Buying Process, B2B Customer Relationship Management,
- **Module 6: Developing a Marketing Plan:** Marketing as a process, Marketing Plan components, and evaluation and understanding
- **Module 7: Marketing Research:** Marketing Research, Types of MR, Quantitative and qualitative, The MR process, Demand estimation, sales forecasting, forecasting methods,
- **Module 8: Segmentation, Targeting, Positioning:** Levels of Segmentation, Basis for Segmentation and methods, Segmentation Criteria and evaluation of Segments, Selection of Target Segment, Product differentiation, Differentiation strategies, Positioning stances, and positioning strategies
- **Module 9: Customer Relationship Management:** Customer Lifetime Value-The concept of Value delivery chain and supply chain, Differentiation between the two, Customer value and satisfaction, and Customer Lifetime Value.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Marketing Management – A South Asian Perspective	Kotler, Philip/ Keller, Kevin /Koshy, Abraham/Jha, M	Pearson	15 th
Reference Books				
1	MKTG	Lamb, Hair, McDaniel	Cengage	Latest
2	Marketing Management	Ramaswamy, VS & Namkumari, S	Macmillan	Latest
3	Marketing	Paul Fill Baines, & Chris Page, Kelly	Oxford University Press	Latest
4	Marketing Management	Arun Kumar & N Meenakshi	Vikas	3rd Edition

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60302	Marketing Management – II	2	0	0	2

Introduction

In this course, students develop a critical appreciation of the basic concepts and techniques of marketing management and strategy with an emphasis on creating customer value and building customer relationships. This course simply takes up from where Marketing Management - I ends. The course develops concepts and skills necessary for marketing decision-making and illustrates how various decision-making tools apply to actual business situations. This course focuses on how the major elements of the marketing mix - product policy, channels of distribution, communication, and pricing - fit within different analytical frameworks that are useful to managers. A detailed analysis of these elements shall be done in order to conduct a thorough strategic analysis of marketing opportunities and communicate marketing decisions. This will be followed by coverage of related concepts in services marketing, brand management and competitive strategies. The course will enable students to see “marketing in action” in the business world.

Intended learning outcomes

- Explain the role each element plays in creating value
- Compare different pricing models
- Evaluate the use of different channels of distribution by existing businesses
- Critique advertising execution
- Create a persuasive advertising piece
- Understand the concept of services marketing
- Explain concepts of Brand Strategy, Brand Equity and Brand Management
- Detail various competitive strategies
- Have a view of Holistic Marketing and ability to develop a comprehensive marketing plan

Course content

- **Module 1: Marketing Mix Variables:** Product Decisions- concept of a Product - Product mix decisions' New Product Development – Steps in Product Development. Price Decision: Pricing objectives, Different pricing methods, Product Mix pricing strategies, Price adjustment strategy. Channel Decision: Nature of Marketing Channels, Types of Channel flows, Functions of Distribution Channel, Channel co-operation, conflict and competition, and Channel members – Distributors, Wholesalers and Retailers. Promotion Decision: Promotion mix, Advertising objectives, Developing Advertising Program, Evaluating Advertisement effectiveness, Role of Media in Advertising, and Role of Sales Promotion
- **Module 2: Services Marketing:** Service Industries, Marketing Strategy for service firms, and 7Ps, Managing Service Quality, Product Support Services
- **Module 3: Brand Equity and Brand Management:** Building and measuring Brand Equity, Brand Management tools, and Brand collaborations
- **Module 4: Marketing in Different Contexts:** Competitive Marketing Strategy, Rural Marketing, International Marketing

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Marketing Management	Kotler, Philip & Keller, Kevin	Pearson Education	15 th
Reference Books				
1	MKTG – A South Asian Perspective	Lamb, Hair, Sharma, McDaniel	Cengage Learning	1 st

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62301	Consumer Behavior	1.5	0	0.5	2

Introduction

This course entails both theoretical and conceptual aspects of consumer behavior. This course focuses on studying the psychology of individual decision making and choice making strategies, pattern of behavior exhibited by aggregate groups of consumers and the sociological and cultural influence on the consumer behavior. The aim of this course is to develop an understanding of the core aspects of consumer psychology from economic and marketing perspective

Intended learning outcomes

- Remember the major marketing concepts related to consumer behaviour such attitude formation, personality motivation
- Understand and analyse the customer as an individual, attitude
- Apply the key theories of consumer behaviour to analyse a case/real world scenario
- Analyse the customer behaviour formation

Contents

Module One

- Introduction to Consumer Behavior- The marketing Concept, Technology and Consumers, Customer value, Satisfaction and retention, Consumer Decision Making
- Consumer Behavior and Personality- The Dynamics of motivation, System of needs, Personality development, Personality Traits, Anthropomorphism, Self-Perception
- Consumer Learning- The elements of consumer learning, Classical Conditioning, Instrumental conditioning, Observational Learning, Cognitive learning, Consumer Involvement and hemispheric lateralization, Outcomes and measures of consumer learning

Module Two

- Family and its Social Understanding- Family and Consumer socialization, Family decision making and member's role, Family life cycle
- Cultural Values and Consumer behaviour- Culture's role and dynamics, learning cultural values, Measuring cultural values, Core cultural values
- Consumer Attitude formation and Change- Attitude formation, The Tri Component attitude model, Attitude's additional function, Cognitive Dissonance and Conflict resolution, Causality and Attribution model

Module 3

- Consumer lifetime value model- The Elaboration Likelihood model, Muti-Attribute model, CLV model, and VALS. Theory of Reasoned Action and Theory of Planned Behaviour

Module 4

- Consumer behaviour analysis- Conjoint analysis, Discriminant analysis, SERVQUAL analysis, Consumer Differences and Product Preferences; Product Positioning
- Consumer Behavior Simulation— Analysis of profitability

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
4. Text Book				
1	Consumer Behaviour	Leon, Joseph, Ramesh	(Pearson Publication)	12 e
5. Reference Books				
1	Consumer Behaviour	Dinesh Kumar	Oxford	4e
2	Consumer Behaviour	Leon and Leslie	Prentice	5e
3	Consumer Behaviour	Albert and David	Mc Graw	5e

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62302	Product and Brand Management	1.5	0	0.5	2

Introduction

The course develops concepts and skills necessary for understanding and serving the markets. This course aims to broaden the horizon of marketing emphasizing on a whole range of intricate and complicated activities starting from market research, new product or product category planning, R&D, product launching, sales strategies, integrated communication formats, distribution, pricing and overall strategizing. Shortening PLCs, increased power of suppliers, increased focus on customer retention programs and integration into the global space has made it imperative for the students specializing in marketing to understand the fundamentals of building, measuring, analyzing and managing brands and product categories for a company. The course reinforces learning through hands-on exposure to developing new products to conducting brand audit of existing brands gives the students an ample opportunity to hone their skills in product and brand management.

Intended learning outcomes

- Appreciate the importance of product brand management as a part of marketing function in a business organization.
- Relate the concept and various aspects of product management.
- Appreciate and relate practices with respect to new product development.
- Understand the evolution of branding as a concept and be able to internalize them through real time cases
- Carry out a brand audit for an existing brand in the market
- Understand the need to study brand architecture so the brand portfolio can be more robust.
- Relate to the latest trends and research carried out in the industry.

Course content

- Module 1: Product Management. Introduction to Product Management -An overview of Product Management: Brushing up the basics of Product Mix, Hierarchy, Types of product, Product organization, Product Manager vs Marketing Manager, Skills Required, Changes affecting Product Management, Role of a Product Manager, Product Strategies.
- Module 2: Marketing Planning. Elements of Marketing Plan, Needs and Benefits, Elements, SWOT Analysis, Objectives, Segmentation, Targeting and Positioning
- Module 3: Competitor Analysis. Competition and Competitor Analysis - Defining Competitive Set, Bases of Competition, Levels, Methods for Determining Competitors, Product Deletion, Need for Competitor Analysis, Value Chain, Segmentation Variables for Consumer Markets, Cluster Analysis
- Module 4: Category Attractiveness. Category Attractiveness - Aggregate Category Factors, Marketing Variables, Category Attractiveness over PLC, Category Factors, Category Rivalry
- Module 4: Category Attractiveness. Developing Product Strategy - Elements of a product strategy, Strategic Alternatives, Customer target selection, Value Proposition, Differentiation Strategies, Managing PLC. New Product Development - Need, Categories, Product Modification, Line Extensions, Success Factors, Stages of NPD, Really New Products, Impact of Product Redesign
- Module 5: Brand Management. Introduction to branding, concepts in brand building process, Strategic Planning for creating a brand vision, strategic fit and use of brand knowledge pyramid, concept of brand identity & brand image
- Module 6: Brand Evolution. Selection of branding strategy, Brand evolution grid & trajectory, concept of brand architecture and its implication on branding strategy.
- Module 7: Managing Brands over time. Brand strategies, Managing Brand Architecture, brands over time, brands in a borderless world.
- Module 8: Understanding and measuring brand equity. Concept of brand equity, Understanding Brand equity models like Aaker model, CBBE model, researching and measuring brand equity, Brand value and its measurement by various methods.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
4. Text Book				
1	Brand Management- Principles and Practices	Kirti Dutta	Oxford	1st
5. Reference Books				
1	Product Management	Donald R. Lehman & Russell S. Winer	Tata McGraw Hill	Latest
2	Product Management	Dr. C. Anandan	Tata McGraw Hill	Latest
3	New Product Management	Crawford Benedetto and	Tata McGraw Hill	Latest
4	Brand Management	Harsh V Verma	Excel Books	Latest
5	Strategic Brand Management	Kevin Lane Keller	Pearson Education	Latest
6	Strategic Brand Management	Jean Noel Kapferer,	Kogan Page India Pvt.	Latest
7	Managing Brand Equity by	David Aaker	Free Press	Latest
8	Behind Powerful Brands -From strategy to campaign	John Philip Jones	Tata McGraw Hill	Latest
9	Creating Powerful brands	Leslie de Cheratony & Malcolm McDonald	Elsevier	Latest
10	Brand Vision to Brand Evaluation: The strategic process of growing and strengthening brands	Leslie Cheratony	Elsevier	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62303	Services Marketing	1.5	0	0.5	2

Introduction

This course examines the importance and growing role of Services Marketing. The course will focus on current issues in services marketing and Customer Service strategies. This course focuses on effective customer relationship management, key service delivery elements, and service recovery strategies that lead to the successful implementation of a customer focus in service-based businesses.

Intended learning outcomes

- Explain the unique challenges of services marketing, including the elements of product, price, place, promotion, processes, physical evidence, and people

Understand the profound impact of technology on service

Explain service blueprinting, the integration of new technologies, and other key issues facing today's customer service providers and service managers

- Analyse and identify important trends in services
- Evaluate differences between goods and services and the resulting challenges and opportunities for service businesses
- Apply the expanded marketing mix for services and the philosophy of customer focus in real life situation
- Design service quality measurements to build customer loyalty and evaluate the effectiveness and efficiency of customer service offerings
- Create special services marketing practices to develop new market

Contents:

- Module I: What are Services, Why services marketing, Differences between goods and services, Classification of services, Services Sectors and Industry, Characteristics of Services, Identify important trends in services
- Module II: Service Marketing Mix and its elements, The Gap Model, Customer Expectations & Perceptions of Services, Listening customers through Research, Building customer relationship
- Module III: Recovery, Service Guarantees, Customer Defined Service Standards, Service Blueprint, Service Innovation and Design, Strategic role of Servicescape, Employees and Customers role in Service Delivery
- Module IV: Managing Demand and Capacity, Services Marketing Communications, Pricing strategies of Services corresponding to the value definitions

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Services Marketing: Integrating customer focus across the firm	Valarie A. Zeithaml, Mary Jo Bitner, Dwayne, D. Gremler and Ajay Pandit	McGraw Hill Education	7 th
Reference Books				
1	Services Marketing: People, Technology, Strategy – A South Asian Perspective	Christopher Lovelock, Jochen Wirtz, Jayanta Chatterjee	Pearson	8 th
2	Services Marketing: Text & Cases	Rajendra Nargundkar	Tata McGraw-Hill	3 rd
3	Services Marketing	John E. G. Bateson and K. Douglas Hoffman	Cengage Learning	4 th

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62305	Retail Management	1.5	0	0.5	2

Introduction

This course enables the students to understand the retailing process, the environment within which it operates and the various retail institutions along with their functions. Make students aware of the retail marketing strategies and the financial performance of retail business. The course would provide knowledge and inculcate analytical skills required for retail management and build strong foundation for students who plan to make their career in field of retailing factoring in current globalization/internationalization trends.

Intended learning outcomes

- Understand and analyze retail marketing for creating value with product and price strategy.
- Develop aptitude to create and craft the retail brand positioning/ equity by evaluating retail brands and identifying retail market segments and targets. Exercise efficiently choosing, creating and communicating customer worth in retail markets and converting that worth into returns growth and profitability.
- Understand how different retail formats compete for share of retail wallet and why certain retail concepts perform better than others across different retail segments. Make cognisant choices of models of examination and other theoretical tools intended for the challenges that companies in retail marketing face.
- Learn about retail operations and why it is so difficult to implement a winning retail strategy. Develop a mechanized retail marketing plan for business that mainly targets retail customers.
- Develop ideas about how consumers look at retailers and how they value different companies.
- Learn to create and develop retail marketing strategies and plans for conducting retail marketing responsibly for long-term success.

Contents

- Module 1: Retailing in India. Introduction, Market Size, Investment Scenario, Government Initiatives, What Does the Retailing Industry Include? The Importance of Retailing, Retail Strategy and Structure, Margin Turnover Model, Store Strategy Mix, Non-Store Retailing, Retailing Decisions, Emerging Trends in Retailing.
- Module 2: Retail formats & theories. Introduction, Classification of Retail Formats, Form of Ownership, The Wheel of Retailing, Traditional Retail Formats, Modern Retail Formats, Types of Chain Stores in the Indian Context.
- Module 3: Retail Strategy. Introduction, What are the Key Growth Imperatives and Enablers, The Need for Strategy Formulation, Organizational Objectives Driven by Planning, Strategic Options Available to Retailers for Exploring Opportunities, The Indian Context of Retailing, Significance of Category Management as a Strategy Tool, Role of Promotional Mix in Retail Strategy, Services Retailing: A Growth Area.
- Module 4: Understanding Retail Consumers. Introduction, Retail Activities, Consumer Behavior, Patterns, Factors Affecting Consumer Decision Making Process, Stages of Consumer Decision Process, Types of Consumer Decision Making Process, Influence of Situational Variables on Shopping Behavior, Consumer Images of Retail Stores, A Sample of a Customer Profile and Analysis.
- Module 5: Location, Store Design & Layout. Introduction, Importance of Locational Decisions in Retailing, Aspects of Locational Decisions and Influencing Factors, Nature of Retail Locations, Nature of Consumer Goods and Location Decision Area, Techniques for Locational Assessment and Retail Locational Theories.
- Module 6: Retail Merchandising, Merchandising Buying & Control. Introduction, Merchandising, Cross Merchandising, Objectives of Merchandising, Merchandise Planning, Category, Category Captains, Private vs. National Brands, Quality as a Parameter of Merchandising, Merchandise Mix, Factors Affecting Merchandise Mix Decisions, Merchandise Logistics, Supply Chain Management, Planogram.
- Module 7: Retail Atmospherics. Introduction, Importance of Atmospherics Planning, Key Components of Retail Atmospherics, Visual Merchandising in India, Store Space Management, Retail Performance Measures, Atmospherics in Context with Internet Retailing.
- Module 8: Retail Pricing & Merchandise. Introduction, External Influences on Retail Pricing Strategy, Retail Pricing Objectives, Retail Pricing Approaches, Retail Pricing Strategies, Tactics for Fine Tuning the Base Price, Setting Retail Prices, Methods for Setting Retail Prices, Role of Price Elasticity and Sensitivity-Consumer Responsiveness to Prices.
- Module 9: Retail Operations, Measuring Retail Performance. Introduction, The Merchandise Decision

Matrix, Merchandise Management in Organised Retail Category Management, Merchandise, Planning - The Key in Category Management, Measuring Profitability in Retail Operations, Monitoring Performance in Retail Operations, Maintaining Uniformity Across Retail Outlets.

- Module 10: Technology in Retailing. Introduction, Need for Technology, Application of Technology in Various Areas of Retailing, Factors Influencing Selection of Technology, Latest Trends of Technology in Retailing, Precautions While Handling to Technology in Retail, Electronic Article Surveillance (EAS), American Business Systems (ABS).
- Module 11: Retail Marketing & Communication. Introduction, Reasons Governing the Change in Customer Attitude, Retail Marketing Communication, Basic Tasks of Communication, Integrated Marketing Communication: The Concept, Steps for Designing and Effective IMC Strategy, Positioning of a Retail Store, Store Atmosphere and Visual Merchandising, Retail Promotions, Promotional Objectives, Types of Sales Promotions, Role of Salespeople and Sales Promotion.
- Module 12: Service in Retail Sector. Image and presentation, Promotion and services, Contact and communication with customers, Service delivery, Monitoring and improving services, Resolving Customer problems, Customer relationship management, The Evolution of Customer Relationship Marketing, Strategies of Customer Relationship Marketing in Retailing Industry, Customer Relationship Marketing (CRM) in Organised Vs. Unorganised Retail Sector, Establishing Loyalty Programmes.
- Module 13: Omni channel and Customer Experience. Traditional Customer Life Cycle, Digital Customer Life Cycle, The future of Customer Experience, Omni channel feat marketing technology. Experiential retailing, Retailtainment
- Module 14: Green Retailing. Curbing Waste, Reducing packaging, Better use of energy, Fewer distribution trips, Reducing Product Miles by sourcing more products locally, The green paradox, Balancing the needs of shareholders, consumers and environment.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Retail Management	Chetan Bajaj, Rajnish Tuli and Nidhi Varma Srivastava	Oxford Publication	3 rd
Reference Books				
1	Retailing Management	Swapna Pradhan	McGraw Hill	2 nd
2	Retail Management: A Strategic Approach	Barry Berman & Joel R. Evans	Pearson	9 th
3	Introduction to Retailing	Robert F. Lusch, Patrick M. Dunne & James R. Carver	Cengage Learning	8 th
4	Retail Management: Functional Principles and Practices	Gibson G. Vedamani	Pearson	5 th
5	Retail Management	Sudarshan Seshanna & Raghu Prasad	MC Graw Hill	1 st
6	Fundamentals of Retailing	KVS Madan	MC Graw Hill	1 st
7	Retail Buying Techniques	Fiona Elliott & Janet Rider	Jaico Books	1 st
8	Managing Retail	Piyush Kumar Sinha & Dwarika Prasad Uniyal	Oxford Publication	2 nd
9	Retailing Management	Levy, Michael / Weitz, Barton.	McGrawHill/Irwin	6 th

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62306	B2B Marketing	1.5	0	0.5	2

Introduction

This course is designed primarily for students seeking a Sales and Marketing career in organizations that market products and services to other organizations. The course should be of special importance to individuals who want to start their own business in B2B domain as case studies and lectures focus on B2B marketing skills including: organizational buying and selling models; launching B2B products and services; pricing a product line; sales management and support; managing distribution partners; and social media for B2B promotion. The course is also appropriate for those students seeking careers in consulting, start-ups, and in other functional areas. The course emphasizes the tactical aspects of business marketing as well as the conceptual and strategic elements. This course explores the challenges in the marketplace by delving into unique problems confronting Business-to-Business Markets today across a broad spectrum of organizations ranging from the traditional industries to high-tech enterprises. It has been specially customized to meet the specific requirements of future managers by raising intriguing questions, debating options and possible alternatives based on the challenges faced on a daily basis.

Intended learning outcomes

- Learn best practice frameworks and tools to succeed in rapidly evolving, complex B2B markets.
- Sharpen critical analysis, problem-solving, and communication skills necessary to lead effective B2B marketing strategy design and execution.
- Practice effectively choosing, creating and communicating customer value in B2B markets and converting that value into revenue growth and profitability.
- Make conscious choices of models of analysis and other theoretical tools designed for the challenges that companies in B2B markets face.
- Develop a business marketing plan for a real local company that mainly targets business customers.
- Make presentations in front of an audience (both verbal and non-verbal skills in presentation).

Contents

- Module 1: Exploring Business Markets and Business Marketing. Introduction to B2B Marketing and Organizational Buying Behaviour
- Module 2: Creating Value for Business Customers. B2B Market Segmentation and Estimation, New Product Development in B2B context and Managing Services in B2B context
- Module 3: Managing B2B Channels and Supply Chain. Managing Value Delivery Networks, Supply Chain Management and Value Network, Strategic Alliances
- Module 4: Building Strong Pricing, Advertising, and Sales Strategies. Pricing Strategies in B2B Marketing, Advertising and Sales Promotion, Managing the Personal Selling Function
- Module 5: Designing Profitable Customer Relationships. CRM Strategies in B2B Marketing and Strategic account management: customer value creation through customer alignment
- Module 6: B2B Marketing Strategy and Product & Brand Management. Strategic Positioning, CBBE Pyramid, Technology Adoption Life Cycle
- Module 7: Marketing Performance Measurement. Level of Marketing Control and Strategy Map and Balance Scorecard.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	B2B Marketing A South Asian Perspective	Michael D.Hutt, Thomas W. Speh & Dheeraj Sharma	Cengage	11th
Reference Books				
1	Business Market Management	Anderson and Narus	Prentice Hall	Latest
2	Business-to-Business Marketing	Brennan, Canning, McDowell	Sage	Latest
3	Industrial Marketing Text and Cases	Krishna K. Havaladar	McGraw-Hill	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62307	Real Estate Marketing	1.5	0	0.5	2

Introduction

The aim and objective of Real Estate Management (REM) course is to inculcate, infuse and build in the students an understanding on real estate business and new business potentials. It shall make the candidates understand the needs, concepts, principles and practices of Real Estate Marketing. Issues of new economy and emerging market forces yielding to profitable business on housing, and infrastructure. Emphasis shall be on real estate management related exercises, articles, case studies, simulation games, role plays, reviews, current article analysis, field visit, individual and group assignments/ projects. They shall foster a holistic idea in the candidate and make him designed to orient accordingly.

Intended learning outcomes

- Become a full proof manager in reality business.
- Operate online or offline for housing, infrastructure and allied business.
- Understand the significance of business and management.
- Shall implement innovative ideas of business for the new markets in new economy.
- Know the elements of the domain which plays in creating value and business, including financial products.
- Shall ascertain different facets of business models in Public Private Partnership
- Evaluate the usage of channels of distribution and cross functionality
- Ensure the e-advertising options in the reality sector
- Understand the scope and concept of consumer behaviour and services marketing
- Develop on the ideas of brand management and competitive strategies
- Understand on the holistic aspects of marketing for comprehensive approach to business plans for start ups.

Course Contents

- Module-1: Real Estate Marketing and Business. Introduction and Overview of REM, Why Real Estate? Introduction to Real Estate Marketing. What is real estate? Concept, origin, merging business, global scenario. The Principle and practice of real estate markets. Genesis of privatization and housing privatization. Scenario of real estate. Housing policies in a comparative study. Theory and practice of privatisation worldwide. Philosophy of privatization and governance unfolding market forces. Types of privatisation, housing privatization, global phenomenon. Housing programs and paradigms globally. Privatization approach and housing Market. Conflicting issues during transition. Importance of land use. Growth and development.
- Module 2 Strategic Marketing Through PPP and Smart Cities. Smart cities, Housing programs and paradigms- Privatization and approach, Market in the scales, Conflicting issues and during transition, and Land use. Housing paradigms and project management- Development of Institutions, Capacity building, management of natural resource and sustainable development, and PPP in Infrastructure, human settlement, UN Role. Urban design in development- Urban design and development, Builders market potential, Urban layouts, development, and planning for business, Urban Land use planning, Municipality, Tahasils, Stakeholders, Environment and sustainable development, and Global strategy for shelter.
- Module 3 Laws and Regulations: Governance and Markets. Marketing, advertisement and salesmanship in housing. BB Pay Master committee, Co-operative housing, first legislation, Marketing issues and advertising, Business Ethics in real estate marketing. Developer housing regulations. Business ethics in real estate, P.G. Kher Committee in Maharashtra, PPP legislation in 1975. IT Usage in real estate market and property business. Population boom, Urban policy planning, community participation, Markets in buildings, population migration, GIS, GPS and networking.
- Module 4 Business Development and Evolving Reality Business. Governance and business development. Confrontations and Compromises. E-governance, New business, Product innovation, R and R Policy. Housing Business, New Business, and Integrated Marketing communication. Business Communication in real estate, sales promotion, Direct selling, BDA. Legal aspects of real estate market. Legalisation of business, Phases in development of laws, laws governing business. Finance Market Promotion, Potential of private housing developers, finance markets. Marketing and Financial aspects of Realty, Golden Coffers and Society, Age old business.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Real Estate Market	Biswajit Das and Asish Kumar Pani	Excel Books	1 st Edition
Reference Books				
1	Marketing for Hospitality and Tourism	Philip T. Kotler, John T. Bowen, James Makens Ph.D., Seyhmus Baloglu	Pearson	7 th
2	Marketing Management	Phillip Kotler and Kevin Lane Keller	Pearson	14 th edition
3	Privatization of Public Enterprises in India	J. Prakash	Himalaya Publishing House	1 st
4	MKTG – A South Asian Perspective	Lamb, Hair, Sharma, McDaniel	Cengage Learning	
5	The Real Book of Real Estate	Robert Kiyosaki	Mass Market Paper Back	

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62308	Customer Relationship Management	1.5	0	0.5	2

Introduction

The goal of any service organization is to create value for customers. In order to survive in the long run companies must retain and attract profitable customers. In order to estimate the life time value of a customer or customer group manager need a deeper understanding of the fundamental principles of the service economy. Service culture/quality, customer satisfaction, corporate image, job satisfaction and relationship-building are critical success factors.

Intended Learning Outcomes

- Understand the use of electronic commerce technologies for the effective management of relationships with individual customers
- Ensure product and service delivery on the web
- Communicate using the web infrastructure
- Analyze the consumer data to take decisions
- Understand the personalized exchange of information with customers and new models of managing customer relationships both internal and external

Course Content

- Module 1: Introduction to Customer Relationship Management. Customer Relationship Management, Types of CRM used across industry, Relationship Marketing and the Concept of Customer Value, Role of Relationship Marketing and its various function
- Module 2: Strategic CRM. Strategic CRM strategies and implementation, Deployment and Execution Challenges, Customer Analytics, Data Mining tools and their application, Using Databases, Software Tools and Dashboards, Loyalty Programs: Design and Effectiveness, Loyalty Programs: Design and Effectiveness
- Module 3: Campaign Management, Impact of CRM on Marketing Channels, Customer Relationship Management Issues in the Business-To-Business Context, Customer Privacy Concerns and Privacy Protective Responses
- Module 4: Applications of CRM in B2B and B2C Scenarios, Future of CRM.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Customer Relationship Management	Kumar, V. Werner, Reinartz	Springer	Latest
Reference Books				
1	CRM at the Speed of Light	Greenberg, Paul	McGraw Hill	4 th

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62309	Integrated Marketing Communication	1.5	0	0.5	2

Introduction

The aim of the subject is to introduce, foster and infuse an understanding on advertising, IMC and ignite interest in the participants, for hands-on experience. This subject shall help acquire knowledge in the principles and practices of marketing communication. To think and act strategically, plan and design IMC projects in sync with business and creativity. The session shall educate on the new knowledge of agile professionals. This subject shall consist of lectures, case study analysis, discussions, classroom interactions, exercises, articles, role plays and games, reviews, guest lecture, individuals and group assignments.

Intended Learning Outcomes

- Shall become a candidate full proof manager with knowledge on advertising and Integrated Marketing Communication.
- Shall understand the significance of advertising and management communication.
- Explain the infused innovative understanding with better knowledge
- Skilled with hands on understanding of the state of the art advertisement.
- Explain the element that constitute IMC and create value.
- Understand the significance of 4 P's with special reference to Marketing Mix.
- Able to evaluate on the application of different tools and techniques in advertising in the existing businesses
- Understand the critique nuances of advertising implementation for positioning
- Create a persuasive advertising appeal through detail understanding of the essence of marketing communication
- Inculcate ideas on the concept of IMC Strategy and planning and Brand positioning.
- Holistic ability to develop a comprehensive IMC planning as an advertiser.

Course Content

- Module -1 Marketing Promotion Mix. 1. Advertising and IMC rudiments Introduction, Marketing Communication, Concepts, definitions and cases etc. 2. Genesis of Marketing Promotion and advertising Marketing, Communication, Marketing Mix. 3. Advertising and IMC in Practice Integrated Marketing Communication, Concepts and practice, definitions for application. 4. Knowing IMC and advertising and Market Environment. IMC: Integral part of marketing: marketing strategy, marketing mix, Promotion, integrating IMC in marketing mix. 5. Consumer behaviour and its application to IMC. Planning promotion, Culture, society, persona, psychology, decision making, Advertisement influencer
- Module -2 Consumer Behaviour and IMC Tools. 1. Consumer behaviour related to IMC. Planning promotional programme, Learn on socio-cultural-eco-environmental psychology and decision making. 2. Advertising and IMC , Communications Process. Communication process, consumer response hierarchy, message, consumer involvement, cognitive processing. 3. Advertising and IMC, Structure of Advertisement and Promotional World. Organisations that business Interacts, advertising agency, integrating advertising to business. 4. Advertising and IMC, IMC Tools for Advertising. Advertising strategy: advertising campaign, strategy statement and approach
- Module 3 Advertising Creative and Sales Promotion. 1. Advertising and IMC Tools. Finding the 'big idea': Getting creative, brainstorming for creative ideas, creative concepts. Creative

execution: execution of big idea, creativity in ad idea, creative belief, celebrity support. A strategic advertising tool: Research process, common error in research. 2. Advertising and IMC (Other Promotion Tools). Sales Promotion and Direct marketing (Introduction, elements of direct marketing, marketing media, internet, direct marketing agencies, ethics). 3. Advertising and IMC , PR, Publicity and Corporate Advertising. Introduction to PR, types of PR, tools of PR, Managing PR, Publicity, Corporate Advertising.

- Module-4 Media Plan Development and Ethics. 1. Advertising and IMC , Media Planning and Strategy, Developing the Media Plan. Developing the Media Plan Introduction to media planning, developing media plan, Steps, Information required, Consumer media, audience measurement, evaluation of mass media types, media budgets. Print media, broadcast media, media planning and developing, Information required and steps, Consumer and audience measurement, mass media budgets. 2. Advertising and IMC , The Legal and Ethical Environments. Legislation of advertising, self-regulatory codes of conduct in advertising, legal and ethical concepts and issues. Regulation governing sales promotion, packaging, labelling, direct marketing, internet marketing.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
4. Text Book				
1	Advertising and Integrated Marketing Communications	Kruti Shah	McGraw-Hill Education, Chennai	6 th Reprint, 2017
5. Reference Books				
1	Advertising and Promotion: An Integrated Marketing Communications Perspective	George E. Belch, Michael A. Belch and Keyoor Purani	Mcgraw Hill Education	9e 2017
2	Advertising Management	Rajeev Batra, John Myers and David A. Aaker,	Pearson, New Delhi	2016
3	Integrated Marketing Communication in Advertising and Promotion	Terence A. Shimp	Cengage Learning 8e 2017	2018
4	Advertising Management	Jaishri Jethwaney and Shruti Jain	Oxford Higher Education	2017

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62310	Hospitality & Tourism Marketing	1.5	0	0.5	2

Introduction

The course introduces the participants to the Hospitality and Tourism Marketing. It will brush up the basics of Marketing Management with the exclusive insight, examples, cases and application of the Hospitality and Tourism industry in particular and Service industry in general. In this course due emphasizes on the practical aspects of the subject as well as the concepts is given. It draws extensively examples and short case studies of marketing in action. It equip the participants to analyse theory and applied case studies related to Hospitality and Tourism industry particularly in Indian context and the global context in general. The course shall prepare quality managers to take up responsibilities in a very broad area such as Hotels, Motels, Airlines, Cruise-lines, Travels agencies, Tour Operators, Travel BPO's, Consultancies, Customer Care and many other service industries such as Telecommunication, Healthcare, Entertainment etc.

Intended learning outcomes

- Understand and appreciate the basic concepts and practices of modern Hospitality and Tourism Marketing
- Understand the relationships between the world's hospitality and travel industry

- Understand why the marketing concept calls for a customer orientation
- Apply these concepts Hospitality and Tourism Marketing to Hospitality and Tourism industry
- Identify marketing strategies for competitive advantage
- Analyse the relationships between customer value and satisfaction
- Demonstrate an understanding of the interrelated macro environment components influencing Hospitality and Tourism industry
- Students will be able to discuss prevailing world conditions associated with marketing of Hospitality and Tourism products and services at local, global, international, and intercultural levels
- Evaluate marketing and outline the steps in the marketing process
- Students will be able to analyse the different components of market segments in local, global, international, and intercultural environments of Hospitality and Tourism industry
- Apply the concept of the lifetime value of a customer and be able to relate it to customer loyalty and retention
- Students will create the target marketing strategy of a well-known Hospitality and Tourism firm.

Contents

- Module I: Understanding the hospitality and tourism marketing process: marketing for hospitality and tourism, service characteristics of hospitality and tourism marketing, hospitality and tourism marketing systems.
- Module II: Developing hospitality and tourism marketing opportunities and strategies: the marketing environment, managing customer information to gain customers insights, consumer markets and consumer buying behaviour, organizational buyer behaviour of group market, customer driven marketing strategy, creating value for target customers, factors that influence customers' perceptions of hospitality and travel services.
- Module III: Developing the hospitality and tourism customer value-driven strategy and mix: designing and managing products and brands, building customer value, internal marketing, understanding and capturing customer value, marketing channels, engaging customers and communicating customer value, public relations and sales promotion, professional sales, direct, online, social media and mobile, major demand and supply influencing today's hospitality and travel industry, characteristics of personal selling in the hospitality and travel industry
- Module IV: Managing hospitality and tourism marketing: destination marketing, next year's marketing plan, building-block approach for setting a marketing budget and explain its benefits, process used to control the marketing plan.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Marketing for Hospitality & Tourism	Philip Kotler, John Bowen & James Makens	Pearson Education	7 th
Reference Books				
1	Introduction to Tourism & Hospitality Industry	Sudhir Andrews	TMH	3 rd
2	Marketing Essentials in Hospitality and Tourism	Stowe Shoemaker, Margaret Shaw	Pearson Education	3 rd
3	Sales & Marketing – A Textbook for Hospitality Industry	Sudhir Andrews	TMH	2 nd

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62311	Marketing Research	1.5	0	0.5	2

Introduction

The main objective of this course is to equip students with the key concepts and methods of marketing research, and allow student to understand how to apply those tools to solve real-life business problems. This course focuses equally on (i) technical competence and (ii) application to real-life problems. We cover the technical aspects of marketing research (both qualitative and quantitative research methods) through the lectures and individual homework assignments. We also discuss real life application using various mini-cases. The other important element of this course is a marketing research project (more details under the “Suggested Projects” section below) where students identify and solve a real business problem using marketing research methods.

Intended learning outcomes

- To be able to design and execute a Marketing research project.
- To translate a marketing problem into a feasible research question
- Conduct research, assimilate data in the desired format for analysis followed by the required analysis
- Making meaningful conclusions for effective decision making i.e. brand positioning, buying preference studies etc
- To use SPSS for Data Analysis
- To have a general understanding of univariate and basic bivariate data analysis techniques (i.e., should be able to decide when a technique is appropriate and understand the managerial implications of analytical results)
- Understand the basics of SPSS to do various kind of analysis namely, cluster, factor, conjoint, Discriminant, regression analysis.
- To Effectively communicate research in a written report and presentation
- Make presentations in front of an audience (both verbal and non-verbal skills in presentation)

Contents

- Module 1: The Marketing Research Process: An Overview- Research Design, Clarifying the Research Question through Secondary Data and Exploration
- Module 2: Qualitative Research- Focus Group Discussion, In Depth Interview techniques, Projective Techniques, Ethnography, New trends in Qualitative Research
- Module 3: Quantitative Research- Measurement Scales, Questionnaire Design, Sampling Concepts
- Module 4: Data Preparation and Description (with SPSS and MS Excel)- Exploring, Displaying, and Examining Data, Hypothesis Testing, Measures of Association and Difference and Regression Analysis
- Module 5: Multivariate Data Analysis (With SPSS)- Introduction to Multivariate Statistics, Factor Analysis, Multidimensional Scaling, Cluster Analysis, Conjoint Analysis (CA).
- Module 6: Report Preparation and Presentation- Structure of research report, Presentation of report

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Marketing Research: An Applied Orientation	Naresh K. Malhotra, Satyabhushan Dash	Pearson Education	Latest
Reference Books				
1	Marketing Research	Aaker, Kumar, Day & Leone	Wiley	Latest
2	Essentials of Marketing Research	W Zikmund	Cengage	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62312	Digital and Social Media Marketing	1.5	0	0.5	2

Introduction

As the usage of internet is growing at an exponential rate, all businesses around the globe are moving their marketing efforts to online channels. Further, many of them are looking for people (especially MBA graduates) who have the understanding as well as a practical experience with digital marketing process. The course will help train candidates to address challenges faced by marketers in utilizing digital and social media to market their products, services, brands, events or organizations. Digital and Social Media are going to be the mainstay of marketing and advertising in times to come and our students need to be equipped with the right tools to be good marketing managers.

Intended learning outcomes

- Appreciate the role of Digital and Social Media in the larger media mix of a company
- Define Digital and Social Media Channels
- Create appropriate objectives for each channel in Digital and Social Media
- Understand the components of a Digital Plan
- Understand the components of a Social Media Plan
- Create a Digital and Social media plan
- Assign appropriate content marketing strategies for each media and channel
- Appreciate SEO and SEM
- Converse intelligently with an SEO and SEM provider with clear objectives and critical appreciation
- Appreciate the importance of Google Adwords
- Run an Adwords campaign with minimal professional support
- Run paid and unpaid Campaigns on Facebook, Twitter and LinkedIn with no or minimal professional support

Course content

- Introduction to digital and Social Media: Objective of the course, Course Overview, Defining Social Media, Defining Digital Media, Why Digital and Social Media? Evolution of the various Digital Media, The Social Media Story and evolution, Marketing through “new” media, Digital Marketing Strategy and Components,
- Web Development and Designing
- Introduction, Key terms and concepts, how it works, Planning and Designing
- SEO and SEM
- Basic Concepts, Illustrations, Differentiation, Techniques, Copywriting for SEO. Creating SEO content and designing a SEM based content hierarchy
- Email Marketing: Introduction, Key concepts, History, Techniques and illustrations – Students will do an in-class exercise of writing an email marketing a new technology product
- Online Advertisement: Introduction, Key terms and concepts, how it works, various forms and types, The future of online advertising, The good and the bad, The bigger picture
- Social Media Channels: Exploration and understanding of various social media channels, Identifying Social Media Channels for a campaign, Social Media Strategy, Social Media to solve business challenges, Steps in creating a social media strategy and campaign. Use of different channels in different ways, Creation of Social Media Disruption
- Twitter: Key Concepts, Twitter presence and followers, how to have meaningful followers, Creation and sustenance of a twitter campaign, use and misuse of hashtags
- Facebook: Facebook pages for companies, Facebook as a page, Facebook ecosystem, Facebook advertisements, creating compelling content for Facebook sharing
- Web Analytics and Measurement: Web Analytics tools, how they work, how to interpret data from analytics, what to look for.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
	Text Book			
	No Text Book. Instructor handouts and online resources will be provided			

Reference Books				
1	eMarketing: The essential guide to digital marketing	Rob Stokes	Free E-Book	6 th Edition
2	All Marketers are Liars Tell Stories	Seth Godin	Penguin Portfolio	/ 2012
3	Social Media Marketing	Tracy L. Tuten, Michael R. Solomon,	SAGE	2nd Edition
4	The Social Media Marketing Book	Dan Zarrella	O'Reilly	2017
5	Permission Marketing : Turning Strangers into Friends and Friends into Customers	Seth Godin	Penguin Portfolio	/ 2017

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62313	Agency & Media Management	1.5	0	0.5	2

Introduction

This course builds the necessary competence in managers to manage accounts in advertising or media agencies. This also builds a good appreciation of the agency side of the business if you are on the client side. This course is logically divided into two parts - (i) Agency Management, (ii) Media Management. In agency management, the students get an appreciation of the major parts, functions and methods of an ad agency. In media management students get an appreciation of the media planning, buying and selling functions. As a by-product, students also learn client pitching and presentation. Account planning exists for the sole purpose of creating advertising that truly connects with consumers. The course advocates an approach to consumer research that is based on simplicity, common sense, and creativity giving key consumer insights, develops ongoing relationships with them. Students gain critical insights in various campaigns and get an opportunity to revamp the strategies. Media planning and buying is another important component of campaign development. In this course students get the opportunity to work on projects involving intense media planning through use of media mix options, media scheduling and optimal usage of media budget. Use of proper media vehicles to deliver the communication to the intended target audience .

Intended learning outcomes

- After end of the course, the student would be able to:
- Understand process of ad campaign development and execution.
- Understand the role played by the agencies and functional departments involved in the process.
- Understand the client's part of the involvement.
- Get a holistic idea of how to manage the agency client relationship.
- Understand the key insights of the market and brainstorm the same during the campaign development.
- Gain key insights in creative aspects of the campaign along with the fundamentals of media planning and buying.
- Present the creative as well as media plan to the client.
- Prepare media plans through proper use of media budget, media vehicle and well spread out schedule of ad releases.

Course content

- Module 1: Introduction to AMM. Understanding Marketing Communication, Emerging complexities in marketing communication, Defining the communication objectives and its execution- Cognitive response model, Elaboration Likelihood Model. Implication of using FCB Grid in campaign development.
- Module 2: Agency Management. Introduction to the advertising industry, Structure and types of agencies, Specialized agencies, Functions of an advertising agency, Departments of an advertising agency, Agency Operations & Management- Client Agency Relationship, Pitch and its types, Factors affecting

selection of ad agencies

- Module 3: Account Planning. Introduction to campaign development, creative briefing, creative development- big idea using market / consumer insights, account planning and development, reinforcement of creative inputs through brand revitalization, brand repositioning, rebranding techniques.
- Module 4: Media Management. Roles of the Media Buyer, Seller and Agencies, Media Basics, Media Strategy, Media Weights, Media Mix Decisions, Scheduling, Building a Plan, Evaluating Media Buys, The Buying Process, Budget Setting

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Media Planning and Buying	Arpita Menon	Tata McGraw - Hill Education	1st
Reference Books				
1	Advertising Media Planning, Seventh Edition	Roger Baron, Jack Z. Sissors	McGraw-Hill	Latest
2	Media Planning & Buying in the 21st Century Workbook	MR Ronald, D. Geskey Sr	Createspace	Latest
3	Advertising Media Planning, Seventh Edition	Roger Baron, Jack Z. Sissors	McGraw-Hill	Latest
4	Media Planning & Buying in the 21st Century Workbook	MR Ronald, D. Geskey Sr	Create space	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62314	Pricing Management *	1.5	0	0.5	2

Introduction

Pricing is one of the most important but least understood marketing decisions. Thus the necessity, a) to learn and practice concepts, techniques, and get to grips with the latest thinking on assessing and formulating pricing policies, and b) analyze how firms attempt to capture value, as well as profits, in the revenues they earn. How much should an organization charge for a new product? Can pricing performance be improved for existing products? Setting the right price for a product or service is not easy. Pricing decisions can have a significant and often immediate effect on an organization's bottom line, yet there is much confusion about how best to determine and execute a successful pricing policy. This course is designed to demystify the science behind purchase behaviour and provide participants with a logical and systematic approach to crafting an optimal price structure.

Intended learning outcomes

- Understand qualitative and quantitative techniques for formulation of pricing policies
- Apply pricing theories to create pricing policy for new offerings
- Analyse dynamic pricing in emerging contexts
- Evaluate prices of existing offerings

Contents

- Value cascade: Value creation & communication, price structure, pricing policy, pricing level & price competition
- Value creation: The Source of Pricing Advantage, The Role of Value in Pricing, Estimate Economic Value, Value-Based Market Segmentation.
- Value communication: Adapting the Message for Product Characteristics, Strategies for Conveying Value, Multiple Participants in the Buying Process
- Pricing structure: Offer Configurations, Price Metrics, Price Fences, Peak Pricing and Yield Management
- Pricing policy: Policies for: Different Buyer Types, Dealing with Power Buyers, Successfully Managing Price Increases, Leading an Industry-Wide Increase, Transitioning from Flexible to Policy-Based Pricing

- Price setting: Define the Viable Price Range, Make Strategic Choices, Assess Breakeven Sales Changes, Gauge Price Elasticity, Account for Psychological Factors
- Managing conflict in pricing: Understanding the Pricing Game, Competing to Grow Profitably, Reacting to Competition: Think Before You Act, Managing Competitive Information, Collect and Evaluate, Competitive Information, Selectively Communicate Information, When Should You Compete on Price?
- Research techniques for pricing management: Types of Measurement Procedures, Experimentally Controlled Studies of Actual Purchases, Uncontrolled Studies of Preferences and Intentions
- Pricing and product life cycle: Pricing an Innovation, Price Reductions in Growth, Pricing the Established Product in Maturity
- Organizing for effective pricing management: Creating Alignment on Pricing Objectives, Matching the Extent of Pricing Centralization with Organizational Needs, Decision Rights Specify Pricing Roles and Responsibilities, Pricing Processes to Ensure Successful Strategy Implementation, Performance Measures and Incentives: Aligning Sales Incentives with Strategy
- Managing Export Prices in Foreign Currencies, Foreign Market Sales Strategy, Competitive Impact of Exchange Rate Shifts, Four Generic Strategies for Managing Exchange Rate Price Adjustments

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
4. Text Book				
1	The Strategy and Tactics of Pricing	Thomas T. Nagle & Georg Müller	Routledge	6 th , 2018
5. Reference Books				
1	Pricing Strategies: A Marketing Approach	Robert M. Schindler	SAGE Publications, Inc	2012
2	Pricing for Profit: How to Develop a Powerful Pricing Strategy for Your Business	Peter Hill	Kogan Page Ltd, United Kingdom	2015
3	Smart Pricing: How Google, Priceline, and Leading Businesses Use Pricing Innovation for Profitability	Jagmohan Raju Z. Zhang	FT Press	2010

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62304	Sales & Distribution Management	1.5	0	0.5	2

Introduction

Sales and Distribution is a critical aspect for a firm engaged in marketing of goods and services. A marketer needs to ensure that the product/ service offered by the firm reaches the target customer base at the right time, at the right place with the right value. However availability of a product does not ensure sale and hence the marketer needs to employ the right sales strategy befitting the product, the market environment, firm context and personal selling skills.

Intended learning outcomes

- Understand all major steps of sales process, know how to apply them in real life situations and be ready to kick start their sales career (Understand)
- Develop the expertise of planning and implementing sales programs in corporate environment (Apply)
- Gain an understanding of sales personnel management and maintenance of relationship with channel partners (Understand)
- Appreciate and evaluate channel selection, design, implementation and effective monitoring with a cross industry perspective (Evaluate)
- Take up channel management activities at entry level in corporate houses (Create)

Contents

- **Introduction:** Importance of Sales Management and types of Personal Selling
- **Personal Selling:** Selling Styles, Selling Situations and Required Selling Skills, Various Stages of Selling Process
- **Channel Management.** Definition and interdependence of Marketing Strategy and Channel Strategy; Definition, Role & Function of Distribution Channels from Consumer Perspective, Channel Partners, Environment, Selling Strategy and Designing Distribution Channels; Choice of Channel, Channel Preferences and Formats, Channel Length, Functions, Distribution of Services, Distribution of Perishables, Models - Cash & Carry, Hub & Spoke; Operational Decisions in Channel Management, Channel Partners – Roles and Responsibilities; Online Channels: Designing omni-channels and making use of online channels.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
There shall be no textbook but a course handbook on distribution management compiled by the instructor.				
Reference Books				
1	Sales and Distribution Management: An Indian Perspective	Pingali Venugopal	Sage	1 st Edition
2	Marketing Channels	Dinesh Kumar	Oxford	1 st Edition
3	Marketing Channels: A Management View	Bert Rosenbloom	Cengage Learning	8 th Edition
4	Sales and Distribution Management	Panda and Sahadev	Oxford	2 nd Edition

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62315	Digital Marketing Analytics	1.5	0	0.5	2

Introduction

This course focuses on data analysis and metrics used for digital marketing. There is no prerequisite for the class. However, students would have to become comfortable with data analysis (mostly using Microsoft Excel). It would be easier if students have taken some statistics or digital marketing courses prior to this. The course will cover important tools and techniques in measuring and analysing Digital Marketing application and their outcomes. The analytics will be structured around the three main components of digital media - owned media, paid media, and earned media. The course will deal with analytical techniques used for managerial decisions in these media. The course is designed around business applications and caselets. These caselets will provide the context for the analysis. The data analysis and visualisations will be done using two industry standard tools – Microsoft Excel and Tableau. Extensive use of platforms like Facebook, Google Analytics and Google Marketing Platform will also be done.

Intended learning outcomes

- Understanding various data analytics tools for digital marketing
- Analysing digital marketing data: Cleaning data, Staging data, Analyse data, and Report data
- Creating data visualisations
- Become familiar with data mining and statistical methods
- Creating digital marketing analytics dashboards

Contents

- Introduction to Digital Marketing Analytics: What is analytics, What is digital marketing, What is analytics for digital marketing
- Digital Media components: Owned Media, Paid Media, Earned Media
- Analytics with Excel: Advanced Excel for digital marketing analysis, Exercises with data analytics using Excel
- Data Visualisation: Introduction to Tableau, Data visualisation exercises with Excel and Tableau.
- Economics and Technologies involved in Digital Marketing
- Search Engine Marketing Analytics: Basics, Metrics, Mechanics, Analytics for SEM, Issues with SEM Analytics, Measuring ROI for Search ads
- Online / Display Advertising Analytics: Basics, Metrics, Mechanics of Online Ads, Measuring Online Ads ROI, Issues with Display Ad Analytics, Assessing impact of marketing investments using Regression Analysis, A-B Testing experiments and analysis
- Web Analytics: Basics, Metrics, Web Analytics through Google Analytics, Alternatives to Google Analytics, Exercises and experiments
- Email Analytics: Basics, Metrics, Analysis of metrics
- Social Media Analytics: Facebook Analytics, YouTube, Twitter Analytics, Calculating ROI and making better decisions

Text and reference books

Text Book				
There shall be no textbook but a course handbook on distribution management compiled by the instructor.				
Reference Books				
1	Digital Marketing Analytics: Making Sense of Consumer Data in a Digital World, 2nd Edition	Chuck Hemann Ken Burbary	Pearson	2 nd
2	Web Analytics 2.0: The Art of Online Accountability and Science of Customer Centricity	Avinash Kaushik	Sybex	1 st

Area: Financial Management

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62204	Accounting for Managers	1.5	0	0.5	2

Introduction

Accounting has two perspectives. First, recording transactions and developing accounting reports and second, use of the report in decision-making. Three sets of issues are covered- the process of recording of the transactions, generation of summary reports, financial statements and use of financial data for decision-making.

Intended learning outcomes

- Able to remember all the accounting concepts
- Able to understand the various concepts
- Able to apply the concepts for the real life experience
- Able to analyze the accounting information
- Able to evaluate the various alternatives of accounting information
- Able to create the new ideas differently for the analysis of financial statements

Contents

- **Accounting basic and process:** Accounting process and financial statement preparation as per the Indian Company Act 2013
- **Indian Accounting Standards in convergence with IFRS:** Ind AS-1: Presentation of Financial Statements; Ind AS-7: Statement of Cash flows; Ind AS-8: Accounting Policies, Changes in Accounting Estimates and Errors; Ind AS-10: Events after the reporting Period; Ind AS 18- Revenue Recognition (Goods and Services); Ind AS-37- Provision, Contingent liabilities and Contingent Assets.
- **Cash flow statement preparation and analysis-** stand alone and consolidated financial statements
- **Company Annual Report-** discussion on annual report contents including schedules, management discussion and investor presentation by companies
- **Analysis of Financial Statement** – how to read balance sheet, tools used for analysis of Financial Statements- Ratio Analysis- Balance Sheet Ratios, Profit and loss account and Inter- statement ratio
- **Financial Planning-** Financial planning and forecasting, projected cash flow estimation, pro- forma financial statement preparation
- **Sectoral Financial Statement Analysis** – analysis of financial statements of banks, insurance companies, non-profit organizations

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Financial Accounting -A Managerial Perspective	Narayan Swamy R	PHI Publication	Latest
Reference Books				
1	Financial Accounting for Managers	T.P.Ghosh	Taxman Publication	Latest
2	Financial Accounting for Management	Ramchandran N & Ramkumar K	Mcgraw Hill	Latest
3	Accounting (Text & Cases)	Anthony Robert N	TMH Publication	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60202	Cost and Management Accounting	2	0	0	2

Introduction:

This course of Cost and Management Accounting has been designed to equip students with the desired skill set and knowledge, which will help them to become better decision makers to carry out their responsibility at different managerial positions. The course guides the students to collect relevant information to make the most beneficial use of it to take appropriate decisions. The course teaches the mechanisms to evaluate the performance of departments/jobs/individuals and suggests control mechanisms to bring the job to the track, if found necessary. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Intended Learning Outcomes:

- Students will develop the understanding of the cost concepts, which they can use in their day to day decision making.
- They will be able to calculate the cost of jobs and services and fix the selling price.
- They will develop the skill to evaluate and analyse alternatives for profitable business decisions.
- Students will be able to prepare budgets for various activities, and control the cost in a better way.
- Finally they can prepare better MIS and Performance reports for the need of higher management

Course Content:

- **Managerial Accounting and Cost Concepts-** General Cost Classification- Product costs and Period costs, Fixed Cost/Variable cost, Opportunity cost, Sunk Cost
- **Job order costing-** Allocation and Absorption of Indirect cost (Overhead): Primary and Secondary Distribution
- **Process Costing-**Cost flow in Process Costing, Equivalent units of Production
- **Activity Based Costing-**Why ABC? ABC vs. Traditional Costing, Designing an Activity Based Costing System, Limitations of Activity Based Costing
- **Cost Volume Profit Analysis-**Cost Behaviour Pattern, Contribution Margin Ratio, Break Even Analysis, Sales Mix and Break Even Analysis
- **Relevant costs for decision making** – short term decision making, shut down decision, make or buy decision, segmented profit planning decision, product mix decisions, etc.
- **Profit Planning and performance analysis** -The Basic Framework of Budgeting, Preparing the Master Budget, Operating and financial Budget, Cash Budget
- **Variance analysis and MIS reporting** - Activity Variance, Revenue and Cost variance, efficiency ratios etc.
- **Contemporary issues:** Life cycle costing, Kaizen costing, Target Costing, Balanced Scorecard, etc.

Text and Reference Books

Text and Reference Books				
Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	No text book is prescribed. Course handout will be used			
Reference Books				
1	Management and Cost Accounting	Colin Drury	Cengage	Latest
2	Basic financial Accounting for Management	Paresh Shah	Oxford Publications	Latest
3	Managerial Accounting	Garrison, Noreen & Brewer	McGraw Hill	Latest
4	Cost Accounting	Hornngren, DatarRajan	Pearson	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60205	Corporate Finance – I	2	0	0	2

Introduction

The Corporate Finance-I is an introductory course in finance area. The students are introduced to the financial management decision making process. The course is designed for a general management graduate, who can comprehend the role and function of the chief finance officer of a corporate setup. The course includes the basic topics of finance, like time value of money, Indian financial system, risk and return estimation, raising capital and investment of free cash. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Intended Learning Outcomes:

- How the financial management framework works?
- Role and functions of a CFO
- What is the worth of time in financial decision making process?
- How a country's financial system works?
- How to take stock investment decision from risk and return prospective?
- Basic understanding of capital investment process

Course Contents:

- **Introduction to Corporate Finance & Financial Environment:** Understanding the Finance function, Financial Manager's role, Shareholders wealth maximization, agency cost/theory. Significance of Environment, social and corporate governance (ESG) aspects in corporate financial management practices. Overview of Indian financial system; stock market operations- both cash & derivative market
- **Time Value of Money-** Importance of TVM in financial decision making, present value, future value estimations- use of excel functions in value estimations
- **Valuation of Stocks and Bonds-** how common stocks are valued- dividend discounting model, discounted cash flow model, bond valuation. Use of excel functions in estimation and analysis
- **Cost of capital Estimation-** component cost and weighted average cost of capital and opportunity cost estimation, yield to maturity (YTM) etc. Use of excel functions in estimation and analysis
- **Risk and Return:** How to measure historical and expected return, risk measurement, portfolio risk and return estimation, CAPM, Beta estimation and interpretations, Security Market Line. Use of excel functions in estimation and analysis
- **Leverage Analysis:** Operating leverage and financial leverage, EBIT-EPS relationship. Use of excel functions in estimation and analysis
- **Long term Investment Decision:** Cash Flow estimation, Capital budgeting concepts, cash flow estimation, methods of capital investment evaluation-NPV, IRR and other methods. Use of excel functions in estimation and analysis
- **Working Capital Management:** liquidity and profitability concept, working capital cycle, working capital estimation, introduction to the components of working capital- inventory, receivables, cash, sources of short-term finance.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Financial Management	Pandey, IM	Vikash	Latest
Reference Books				
1	Financial Management: Theory & Practice	Chandra, Prasanna	Tata McGraw Hill	Latest
2	Principles of Corporate Finance	Brealey, Myers, Allen, Mohanty	Mcgraw Hill Education	Latest
3	Financial Management	Khan & Jain	Tata McGraw Hill	Latest
4	Corporate Finance: Theory & Practice	Damodaran	Wiley	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62213	Corporate Finance-II	1.5	0	0.5	2

Introduction:

The ever-changing economic environment does not allow the finance manager to operate in an ideal business situation. The manager will have to learn how to respond to the impending business situations and finally achieve the goal of sustenance and growth for the Organisation. In order to achieve this goal, the manager should have the ability to analyze and respond to the business environment relating to different finance functions. This course is an extension of the Corporate Finance – I which elaborates the finance functions with more detail having an analytical perspective. Further. It discusses on dividend decisions, capital structure theories and indicators of insolvency which are in present times has become a major decision making area for a finance manager. Management students can work effectively in the finance function of an organization after studying this subject. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Intended Learning Outcomes:

- know what are the impact of leverage on profitability of an organisation.
- relate effective strategic financial decisions to value maximisation□
- Apply the knowledge of operational and strategic finance in the decision making process
- Examine the impact of different kinds of risks on finance decisions
- □Evaluate projects through sensitivity and scenario analysis
- Develop dividend and working capital policies of an organisation

Course Content:

- **Capital Budgeting Decision under risk-** introduction to risk analysis in capital budgeting, methods of risk analysis in capital budgeting- certainty equivalence, risk adjusted discounting rates, simulation and sensitivity analysis, decision tree analysis etc.
- **Financing Decision (Capital Structure)** - Capital structure decision, theories in capital structure, sources of long term financing. Financing and investment function linkage. Latest financing structures of companies with industry data
- **Dividend Decision-** dividend policies, dividend theories; Gordon Model, Walter Model, types of dividend-buyback of shares, stock dividend, stock split. Optimum Dividend Decision: Linter Model ; Latest dividend policies of companies and analysis
- **Working Capital Management:** working capital performance analysis of firms, working capital related ratio analysis, inventory management techniques, management of receivables and payables, management of cash methods and models, working capital financing options for companies.Latest working capital management of companies with industry performance data.
- **Insolvency:** Indicators of insolvency, Negative net worth, Altman Analysis, Insolvency in Indian Companies
- **Global Experience in Corporate Finance.**

4. Text and reference books

Text Book				
1	Financial Management	Pandey, IM	Vikash Publishing	Latest
Reference Books				
1	Financial Management: Theory & Practice	Chandra, Prasanna	Tata McGraw Hill	Latest
2	Financial Management	Khan & Jain	Tata McGraw Hill	Latest
3	Corporate Finance: Theory & Practice	Damodaran	Wiley	Latest
4	Modern Corporate Finance	Alan C Shapiro and S DBalbierer	Pearson Education	Latest
5	Corporate Finance	Stephen A Ross, R W Westerfield, Jeffrey Jaffe and R K Kakani	TMH Publishing	8th Edition

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62206	Security Analysis & Portfolio Management	1.5	0	0.5	2

Introduction:

The investors those who are exposed to the stock market, should understand the company and stock in detail before investing. Identification of stock, managing stock and earning better return on the stock investment are the processes that every investor should practice. This course includes the similar topics like-types of stocks and stock selection, trading strategies, valuation and performance evaluation of securities etc. The pedagogy of the course includes, excel based exercises with real data and case studies. The online stock market trading will be demonstrated by the experts from the industry for better understanding the subject. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Intended Learning outcomes:

- Best Stock market strategies for investment
- Stock selection techniques
- Fundamental analysis methods for value investing
- Technical analysis indicators
- Valuation of fixed income securities and strategies of investment
- Portfolio construction and selection
- Performance evaluation of portfolio and mutual funds

Course Contents:

- **Introduction to security analysis-** Investment Concepts, Investment styles-passive and Active, Growth, Momentum & Value investing, asset classes- Physical Assets-Real Estate, Commodity, Gold, financial asset types including debt & equity, types of investors, investor psychology
- **Indian Stock market:** segments in the stock market- cash, derivative and debt, stock trading requirements- demat account, trading account, stock market operation, online trading and settlement process, stock market index and its measurement
- **Derivative market:** structure of derivative market, types of future and option instruments, trading requirements, process and settlements in derivative market. stock and index derivatives, option trading and strategies, derivatives and risk hedging
- **Analysis of Fixed Income Securities** - valuation of bonds, Different bond yield and return measures, Understanding term structure of interest rates, analysis of risks in bonds-duration and its types and convexity. Bond portfolio management- passive & active bond management, bond immunization strategies. Excel application in bond valuation and analysis with real market data.
- **Fundamental Analysis:** fundamental factors for stock analysis, economic, industry and company analysis.
- **Technical Analysis:** technical charts and patterns, technical indicators for stock analysis, technical analysis and forecasting of stock performance
- **Portfolio analysis & Selection-** Return and risk estimation for both stock & portfolio, optimum portfolio, efficient frontier. Beta, Capital Asset Pricing Model & SML, Markowitz Diversification model, optimal portfolio, efficient frontier & CML, Single, Multi & Industry Index Model. Use of excel functions in stock and portfolio analysis with real stock market data
- **Portfolio performance evaluation-** Arbitrage pricing model, Sharpe index, Treynor Index, Jensen's alpha, Information ratio, Fama's decomposition measure
- **Mutual fund performance-** types of mutual fund, asset allocation and NAV calculation, MF performance evaluation
- **Efficient Market Hypothesis-** different forms of market efficiency, event study method

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
5	Investments	Bodie , Kane, Marcus & Mohanty	TMH	Latest
Reference Books				
1	Security Analysis	Graham, Benjamin Dodd, David	McGraw Hill	Latest
2	The Intelligent Investor	Graham, Benjamin	Harper Collins	Latest
3	The Essays of Warren Buffett: Lessons for Corporate America	Cunningham, Lawrence	Carolina Academic Press	Latest
4	Damodaran on Valuation: Security Analysis for Investment and Corporate Finance	Damodaran, Aswath	Wiley-India	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62201	International Financial Management	1.5	0	0.5	2

Introduction

The objective of this course is to develop an understanding on various international trade and financing concepts. In a globalized economic scenario, international trade and the financial system are important components of the business environment in which firms operate. The course will explore the implications of trade theories and financial markets for multinational companies and apply those concepts in business decision making under a broad macroeconomic environment. Trade finance and its forms will be studied including the role of capital flows in an open economy. In order to make the course application oriented solution of various real life cases are included in the pedagogy. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Intended Learning Outcomes

- Understand the concept and nature of international capital and foreign exchange market
- Identify and appraise investment opportunities in the international environment.
- Analyzing the nature and functioning of foreign exchange markets, determinations of exchange rates and interest rates and their forecasting
- Identify risk relating to exchange rate fluctuations and develop strategies to deal with them
- Gain knowledge about the trade practices, procedures and documentation of international trade finance.
- Knowing the environment of international finance and understanding and analyzing the various sources of trade financing drawing its implications on international business.
- Develop strategies to deal with other types of country risks associated with foreign operations
- Above all, designing financial strategies in a global environment.

Contents

- **Module-1:** Introduction to International Financial Environment, A Snapshot of Theories of International Trade, Factor Movements and International Trade in Services and Balance of Payments
- **Module-2:** Exchange Rate System, Foreign Exchange Market, and Foreign Exchange Facilities and Regulations.
- **Module-3:** EXIM Operations and Documentation, EXIM Policy Framework, and International Trade Terms
- **Module-4:** Trade Financing, Export Payment Terms, Export Credit Risk Management, Customs Duty & Custom Clearance Procedure of Exports and International Shipping Practices.
- **Module-5:** Investment opportunities in International Market

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	International Financial Management-	Jeff Madura	Cengage	13 th Edition
Reference Books				
1	International Economics: Trade & Finance	Dominick Salvatore	Wiley	11 th edition
2	International Financial Management	Alan C. Shapiro and Peter Moles	Wiley	2 nd edition
3	International Trade operations	Ram Singh	Excel Books	2 nd edition

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62214	Financial Reporting and Corporate Governance	1.5	0	0.5	2

Introduction:

The course is aimed at understanding the necessity of reporting of the health of the organization to all the stakeholders of the firm. The changing requirements of reporting due to developments in the corporate disclosure policies of companies make the course relevant for finance students. The course enables them to visualize the need of fair reporting of companies status and the role played by different bodies, like board of directors and different committees of directors and auditors to protect the interest of investors and other stakeholders. The course become even important at a time when large corporate are found to be involved in accounting frauds related to disclosure. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Intended Learning Outcomes:

- The course will enable a student to read and analyze financial reports of different companies
- It will exemplify the application of accounting standards in financial reporting.
- The students will be able to differentiate the companies with good corporate governance to the bad ones.
- The students will be able to critiquing the financials of an organization through forensic audit.

Course Contents

- **Introduction:** Concepts of financial reporting and financial statements, Detailed study of the intricacies of annual report.
- **IFRS & Ind AS:** Convergence of Indian Accounting Standard with the IFRS, Major Accounting Standards: Revenue Recognition, Inventory, Cash Flow Statement, Fixed Asset Accounting, Inter Corporate Investment, Foreign Exchange Translation and others.
- **Financial statement analysis:** Techniques of financial statement analysis and indicators of financial performance from various statement prepared, Sector specific financial ratios and their implications.
- **Corporate Governance:** Theory and Practices, Evolution and development of corporate governance in India, Companies Act 2013 and recommendation of various committees, Board of directors, Whistle Blower's Policy, Role of Various Committees, Mandatory and Voluntary Disclosures
- **Forensic Audit:** Financial figures and their trends as the indicators of red flag in a company, Investors' perspective of forensic audit, Discussion on forensic audit of Indian Companies.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Corporate Governance: Principles, Policies and Practices	A C Fernando	Pearson	Latest
Reference Books				
1	Corporate Governance (Modules of Best Practices)	Indian Institute of Corporate Finance (IICF)	Taxman's Publication	Latest
2	Corporate Financial Reporting: Theory, Practice & Cases	Jawahar Lal	Taxmann's	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62223	Banking & Financial Services	1.5	0	0.5	2

Introduction:

The banking system provides the backbone that supports the plethora of financial services firms and financial markets in any economy. In addition to financial intermediation, it provides a payment system to facilitate transactions, currency exchange and trade finance to facilitate international trade, and financial advisory to individuals and firms among other roles. The course aims to provide an overview of the functioning of banks – organizational structure, products, key functions, and regulation. The course will also introduce the students to other financial services – investment banking, NBFC (shadow banking), MFI, insurance and asset management. The specific roles these financial intermediaries serve in the economy and the regulations covering their activities will be covered. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Intended learning outcomes

- A good understanding of the Indian Banking System. Retail Bank and Wholesale banking
- Understanding of different players in the Indian Financial Services.
- Understanding of the processes involved in the selected financial services taught in this session.

Course content

- **Indian Financial System:** Recent developments in Indian Financial System, Market Structure and Financial Innovation, RBI, SEBI, IRDA and their major functions; Role & Function of banks; Regulatory provisions; Enactments Governing Banks (Banking Regulation Act 1949, RBI Act 1935 etc.); Basic concepts of Retail banking, Wholesale banking, International Banking; Role and function of Money Market-CP; Importance of Risk Management in Banks (credit, market, liquidity, operational and Interest rate risk); Impact of Basel I, II & III & Capital Adequacy Ratio
- **Functions of banks:** Deposits, credits, ALM And risk management, payment and settlement,
- **Non-Banking Financial Companies (NBFCs)** – Types of NBFCs and their regulatory framework; Asset finance, gold loans, housing finance, infrastructure finance, real estate finance, loans against securities, vehicle finance and Micro Finance Institutions (MFIs)
- **Financial Services:** Merchant banking and investment banking services, Insurance services, Asset Management, Mutual Funds, Venture Capital and Private Equity, Alternate Investment Fund and Hedge Funds and Other Financial Services

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Modern Banking Theory and Practice	Muraleedharan, D.	PHI	Latest
Reference Books				
1	Indian Financial System	Pathak, Bharati	Pearson Education	Latest
2	Financial Services	Kahn	Tata McGraw Hill	Latest
3				
4	Financial Services and Systems	Sasidharan, K	Tata McGraw Hill	Latest
5	The Financial System in India	Das, S. C	PHI Publications	Latest
6	Banking Principles and Operations	Gopinath, M.N.	Snow White	Latest
7	Introduction to Banking	Iyengar, Vijayaraghavan	Excel Books	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62204	Mergers, Acquisitions & Corporate Restructuring	1.5	0	0.5	2

Introduction:

Indian enterprises are refocusing on the core competency, market share and global competitiveness through business consolidation or merger and acquisitions. The course includes the legal framework, concepts of valuation, modes of squaring the deals, etc. As a student of Finance, studying and learning the different aspects of mergers and acquisitions will help them in understanding the intricacies of the deals happening all over the world. The pedagogy of this course includes a wide range of literature and cases on mergers and acquisitions and other forms of corporate restructuring. The combination of lectures and discussing cases will enhance knowledge and maturity of judgment with respect to M&A decisions. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Learning Objectives:

- Facilitate participants to focus on corporate growth and strategies (expansion and diversification) through mergers, acquisitions, and divestments
- Create a good understanding of valuation methods and issues pertaining to M&A activities
- Familiarize participants with target selection, swap ratio estimation and integration issues
- Students can learn the financing options in M&A- LBO & MBO
- Sensitize participants to various forms of corporate restructuring including the latest insolvency and bankruptcy code (IBC) 2016

Course Content:

- **Introduction to M&A**-Strategic & Economic Aspects of M&A, merger terminology, types & forms of M&A, merger waves in India and abroad
- **M&A Process**- Demergers, steps in M&A process, role of Investment Bankers/financial advisors, Management & shareholders at various stages of a deal, due diligence Process, deal estimation including swap ratio
- **Merger Motive**; value creation in merger deals; merger as a business strategic decision, economic aspects of merger, corporate governance and merger decisions
- **Indian takeover code**- tax, regulatory framework for M&A, Accounting for M&A in India
- **Growth & Value creation**: Valuation of M&A deal-Variou approaches to valuation, synergy valuation methods, pre merger stand alone valuation, value of control
- **Hostile takeovers and Defensive tactics**: the pre and post hostile takeover defense strategies
- **M&A financing**- Leveraged Buyout, management buyout and other methods of merger financing
- **Corporate Restructuring**- internal & external corporate restructuring- including Insolvency and bankruptcy code 2016. Indian case discussion
- **Post-Merger performance**- post merger performance audit, literature study on performance after merger deals, successful and failure deals.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Mergers and Restructuring And Corporate Control	Weston, Chung and Hoag	Pearson Education	Latest
Reference Books				
1	Mergers, Acquisitions, and Other Restructuring Activities	Donald DePamphilis	Academic Press	Latest
2	Mergers acquisitions and Business valuation	Vadapalli, Ravindhar	Excel Books	Latest
3	Merger Acquisitions & Corporate Restructuring	Krishna Murthy, Chandrashekar Vishwanath, S.R	Sage Publication	Latest

4	Takeovers, Restructuring And Corporate Governance	Weston, Mitchel And Mulherin	Pearson Education	Latest
5	Value Creation From Mergers And Acquisitions	Sudi Sudarsanam	Pearson Education	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62216	Project & Infrastructure Finance	1.5	0	0.5	2

Introduction

Project finance is used to finance trillions of rupees of capital intensive infrastructure projects annually. This increasingly critical financial technique relies on the cash flows of a specific infrastructure project not the cash flows of a corporation or third party guarantor to service debt and provide investor returns. Not all projects can support project financing. Project finance is a specialized financial tool requiring both proper structuring and risk mitigation. The purpose of the course is to understand what project finance is, why it is used and how it is used. Public-Private Partnership (PPP) is an important model of infrastructure project finance in India, and its success depends on the clear demarcation of the role of the private and public sectors. Learning the essential elements of structuring such projects is a major takeaway from this course.

Intended learning outcomes:

- Understand essential difference between project finance and corporate finance.
- Learn key features of different infrastructure sectors viz. power, telecom, roads, airports, hospitality, logistics, healthcare etc.
- Learn the necessary elements that support the use of project finance, viz contractual agreements, technology sponsors, risk identification and mitigation, sources of capital, financial structuring, the use of financial modeling, accounting considerations, and tax considerations.
- Understand the role of different parties involved in the execution of infrastructure projects.
- Understand the role of government in facilitating execution of such projects.
- Most importantly, learn the skills needed to model the financial investment and return for large projects.

Course content

- **Introduction to Project Finance:** What is project finance; Project Finance vis-à-vis Corporate Finance; Project Planning and Analysis – key elements of project planning, statutory approvals; typical timeline and milestones in a project
- **Infrastructure projects and their financing in India:** Classification of infrastructure projects, Procurement of infrastructure projects through Public Private Partnership route-Types of PPP models – BOO, BOOT, BOLT etc.; Contractual structure of PPP projects, Value for money evaluation, Lifecycle of PPP projects, PPP procurement process
- **Project evaluation I:** Estimating the cost of the project, market demand and revenue projection; assumptions/market study/contractual nature of revenue projection; future cash flow estimation
- **Project evaluation II:** Financial structuring of projects – debt and equity; designing security arrangements, waterfall mechanism for payments in the post completion phase; analyzing project viability; project risk analysis (risk identification techniques, risk allocation frameworks, risk mitigation strategies); political risk and discount rate adjustment; and Viability Gap Funding (VGF)
- **Project evaluation III:** Rate of Return (project IRR), scenario analysis & stress testing impact on IRR and Social Cost Benefit Analysis
- **Issues in infrastructure financing/investment** – Sources of infrastructure financing, public and private finance, public guarantees (NIIF), role of banks and infrastructure finance companies, post completion financing structures (InvIT), etc.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				

1	Financially Focused Project Management	Cappels, Thomas M	J Ross Publications	Latest
Reference Books				
1	Introduction to Project Finance	Machiraju, H.R.	Vikas Publications	Latest
2	Projects: Planning, Analysis, Selection, Financing, Implementation & Review	Chandra, Prasanna	TMH Publications	Latest

Course	Name of the course	Credits			
Code		L	T	P	Total
OBM62207	Derivatives & Risk Management	1.5	0	0.5	2

Introduction

Derivatives are considered as the most complex and double-edged sword financial instruments. The basic use of derivative is to manage risks that the investor may be exposed to while trading. There are several types of derivative products available, which are being used by stock traders, banks and insurance companies and also by corporate to minimize risk exposure. The kind of derivative product to be used depends on the motive and type of risk to be hedged. In India derivative market is in a growth phase and volume of derivative transactions is also increasing rapidly. Students with good understanding and knowledge of derivatives would be able make lucrative careers in finance. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Intended learning outcomes:

- Understanding of the Derivatives Marketplace, Practices, Conventions and Players
- Understanding of the Derivatives Products like Forwards, Futures, Swaps, Options etc.
- Ability to select the right kind of derivative for a specific situation
- Ability to calculate/determine forward interest rate and forward exchange rate from bond prices and swap rate
- Understanding the option market strategy
- Building curve using boot strap method
- Determining the price/value of different derivative products
- Learn how to set up a Swap Arrangements between two parties with or without a financial intermediary between them
- Understanding of Credit Derivatives like CDS, ABS, CDO, Synthetic CDO.

Course Content:

- **Introduction to Derivatives** - Meaning of Derivative, Insurance vs. derivatives, types of derivatives Instruments (Forwards, Futures, Swaps, Options), Types of derivative traders (Hedger, Speculator, Arbitrageur), Economic Functions of Derivative- Price Discovery and Risk Management Use and Misuses of Derivatives.
- **Derivative Market** - Size of Derivative Market, Exchange Traded Derivative Market, Over the Counter Derivative Market, Participants in the Derivative Market, Trading and Settlement Mechanism
- **Fundamentals of Forward and Future Contract** - Meaning of Forward and Future Contract, Pricing of forward and future contract, Value of forward and future contract, Pricing Model- Cost of Carry Model, Short Selling, Stock Index, Index Arbitrage, Futures and Forwards on Currencies
- **Hedging with Forward and Futures** - Why Hedge, Hedging Concepts, Basis Risk, Hedging Strategies - Long hedge, short hedge and cross hedging, Determination of Optimal Hedge Ratio, Optimal Number of Contracts, Hedging using Index Futures.
- **Interest Rate Derivative** - Types of rates, Continuous Compounding, Zero Rate, Bond Pricing, Par Yield, Forward Rates, Forward Rates Agreement, Liquidity Preference Theory. Forward Rate Agreements, Interest Rate Futures, Markets for Interest Rate Derivatives, FRAs in Hedging, Application of Interest Rate Futures- Long Hedge, Short Hedge, Pricing a Treasury Bill Future

- **Currency Derivative** - Exchange rate Regime and Forex Market in India, Foreign Exchange Rate, Forex Risk, Rupee Forwards, Foreign Exchange Futures and Options, Hedging with Foreign Exchange Future and Option.
- **Swaps** - Meaning and Structure of Swap, Types of Swap, Market for Swap Contracts, The comparative advantage argument, Using Swap Rates to Bootstrap the LIBOR/Swap Zero Curve
- **Interest Rate & Currency Swap** - Structure of Interest Rate Swap, Pricing and Valuation of Interest Rate Swap, Interest Rate Swap Strategies. Structure of Currency Swap, Pricing and Valuation of Currency Swap, Currency Swap Strategies
- **Option Contracts** - Meaning of Option Contract, Development of Option Market, Types of Option Contracts- Call Option, Put Option, Concept of ITM, ATM and OTM. Exchange Traded Vs. Over-the-Counter Options Market, Mechanics of Option Trading, Option Price Quotations
- **Principle of Option Pricing** - Basic notations and terminologies, Put – Call Parity, Principle of Call Option Pricing and Principle of put Option Pricing. Pay-off of Option Contract. Trading Strategies Using Options - Principal Protected Notes, Spreads, Combinations.
- **Option Pricing Models - The Binomial Model** – Concept of Risk Neutral Arbitrage, One- Period Binomial Model, Two Period Binomial Model, The Black- Scholes-Merton Model - Assumption of BSM Model, Factors in The BSM Model, Estimating the Volatility- Concept of Implied Volatility, Valuation of Call and Put Option.
- **Credit Derivatives** - Credit Default Swap (CDS), CDS Structure, Types of CDS, ABS, CDO, Synthetic CDO
- **Corporate Risk Management with Derivative** – Structure of Risk Management in a Corporate, Impetus for Risk Management, Benefits of Risk Management, Managing Market Risk- Value at Risk (VaR).

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Options, Futures, and Other Derivatives	John C. Hull	Pearson	Latest
Reference Books				
1	Financial Derivative	Kumar, S.S.S	Prentice-Hall	Latest
2	Option volatility and pricing strategies	Sheldon Natenberg	Wiley	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62210	Business Analysis and Valuation	1.5	0	0.5	2

Introduction:

The Power to estimate things at their true worth is very important. A good business is absolutely the best investment vehicle one can ever have, provided he/she understands the underlying value and does not overpay for it. Arriving at the value of a business or a group of business assets requires an analysis and weighting of all the drivers of value, both tangible and intangible, and those that are within the control of management, and those that are not. Hence the structure of this course is based on some of the most commonly discussed and applied issues in Business Valuation. The course will be dealt with popular real life cases on the different aspects of valuations. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Intended Learning outcomes:

- Identification of value drivers and inputs for valuation
- Business and equity valuation techniques
- Private company valuation
- Quantitative and qualitative aspects in valuation
- Valuation of specific companies, intangibles etc.

Course Content:

- **Introduction to valuation-** valuation purpose, analyzing financial statements and Identifying Value Drivers, Strategic analysis in business valuation, valuation input and output relationship, valuation principles, business and equity valuation process
- **Discounted Cash flow (DCF) valuation Approach-**Valuation inputs and process, cash flow, growth, terminal value, levered and un-levering of equity betas, discounting rate in DCF valuation, CCF Method of Valuation, APV Methods of Valuation, WACC & EVA. Latest real data of companies used to determine the business and equity value using DCF technique
- **Relative Valuation-** value multiples, comparable identification process, Private company valuation, Liquidation valuation, Sum-of-the parts valuation. Latest real data used for application of relative valuation of both equity and business valuation
- **Real Option valuation-** The Contingent Claim (Real Option) Approach to Valuation, black scholes option pricing model
- **Other Specific Valuation Cases-** Brand and Intangible Valuation, Cross Boarder Valuation, Valuing the control, subscription based firm valuation, social media company valuation

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Valuation	Damodaran, Aswath	Wiley Finance	Latest
Reference Books				
1	Investment Valuation: Tools and Techniques for Determining the Value of Any Asset	Damodaran, Aswath	Wiley Finance	Latest
2	Valuation: Measuring and Managing the Value of Companies	McKinsey & Company Inc	Wiley Finance	Latest
3	Business Analysis and Valuation: Using Financial Statements, Text and Cases	Healy and Palepu	Cengage publication	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62211	Management Control System	1.5	0	0.5	2

Introduction:

The course gives the students ample of opportunities to apply the knowledge acquired in the first year of their MBA programme. The focus of the course is strategy implementation. The knowledge of core functional courses can be applied in the course through cases related to multinational companies. This course has been designed to allow students to gain knowledge, insight, and analytical skills to design and implement the ongoing management system that is used by corporation's executives to plan and control the firm's performance. This course gives hands on experience of strategic planning; budgeting; resource allocation; performance measurement, evaluation, and reward; responsibility centre allocation etc. The knowledge of Management Accounting is a pre-requisite for this course. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Intended Learning Outcomes

- Student will get an insight of Strategy formulation and implementation in companies to achieve the business goal based on the vision of the company.
- It helps the students to understand the need of changes in organizational strategies in the changing business environment to achieve the strategic ambitions of the organization.
- Students will get to know the fundamentals of Management control systems and the necessity of fixing the accountability and measuring the performance of various responsibility centers so that it will align with the organizational goals.
- Students will understand the importance of strategic planning and accordingly allocation of resources through budget and keeping a control over the whole exercise through performance evaluation of responsibility centers.

Course Content:

- **Introduction to Management control system**-Boundaries of Management control, Strategy formulation, Management control and Task control
- **Understanding strategies**- Goals, Corporate-Level strategy, Business Unit level strategies (BCG Matrix, G E Model), Strategic Planning, strategic planning process
- **Organizations Goal congruence**- forms of systems, types of organizations, business segmentation and organization goal congruence
- **Responsibility centers**- types of responsibility centers- Revenue, Expense, Investment and Profit centers
- **Organization Performance Measurements**- ROI measure, EVA and other measures of 3. organization performance evaluation, management compensation
- **Transfer pricing**- Indian laws and issues pertaining to transfer pricing in different industries
- **Budgetary control system**- significance of budget as a measure of control system, behavioural aspects and quantitative techniques used in budget preparation, budgetary control
- **Financial performance report**- analysis of financial performance report as a control system

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
	Management Control Systems	AnthonyGovindarajan	McGraw Hill	Latest
Reference Books				
1	Management Control Systems	Maciariello, Joseph A. Kirby, Calvin J.	PHI	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62217	Financial Time Series & Analysis	1.5	0	0.5	2

Introduction

The financial decision making process involves analyzing historical data to identify the trend and forecasting the next possible outcomes. This analysis is performed with application of numerous econometric models. Financial time series and analysis is the course designed to apply the econometric models with time series data obtained about the companies. The participants will gain practical knowledge in business analytics that helps in understanding the insights of corporate problems. As career in finance focus more towards financial modeling and financial analytics, this course will be immensely helpful to students in their career growth. The course will be dealt with the real data obtained from CMIE database, Stock market and analyzed with excel and other econometric packages.

Intended Learning outcomes

- Ability to understand financial modeling tools and techniques
- Analyze the various factors which will have impact on business decisions
- Practical training in different time series methods
- Understand the impact of various macroeconomic factors on the stock market
- How to analyse real data for business solution?
- How to apply time series data for business forecasting?

Course Content:

- Introduction to Financial Time Series. Distinction between Time series and Cross sectional data, Understanding the basic concept of a Time series, Application of linear regression model to time series data
- Financial Time Series and their characteristics. Asset returns, Distributional properties of returns, Multivariate returns
- Linear Time Series Analysis and Its Applications. Stationarity, White noise and Linear Time series, Correlation and Autocorrelation, Simple ARMA Models, Seasonal Models, Long memory models and Fractional differencing
- Conditional Heteroscedastic Models. Characteristics of Volatility, Model building and testing of ARCH effect, GARCH family models, Use of High frequency data, Forecasting through GARCH Models
- Nonlinear Models and their Applications. Neural Networks, Markov Switching model, Modelling and Forecasting evaluation
- High Frequency data analysis and their Applications. Non-synchronous trading, Empirical characteristics of Transactions data, Bivariate models for price change and duration
- Multivariate Time series. Vector Auto regressive models, Vector ARMA models, Impulse response function, Threshold co-integration and arbitrage
- Factor Models. Concept of Factor models, Macroeconomic factor models, Fundamental factor models
- Principal Component Analysis. Theory of PCA, Empirical PCA, Asymptotic Principal Component analysis
- Multivariate volatility models. Multivariate GARCH models, Cholesky Decomposition, Higher dimensional Volatility models
- State-space models and Kalman Filter. Local trend model, Linear state space models, Kalman filter and smoothing

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Analysis of Financial Time Series	RUEY S. TSAY	Wiley	3rd
Reference Books				
1	Applied Econometric Time Series	Walter Enders	Wiley	3rd
2	The Statistical Analysis Of Time Series	Anderson	Wiley	Latest
3	Multivariate Time Series Analysis: With R and Financial Applications	RUEY S. TSAY	Wiley	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62218	Risk Management in Banks	1.5	0	0.5	2

Introduction

Banks are the foundation on which the modern economy stands. Trust of the depositors is the most valuable asset of any bank and to safeguard the trust banks have to ensure that they are solvent at all times, under all situations. Modern risk management techniques are the tools available to banks to evaluate their risk exposure and they use their capital as a buffer to protect themselves from the risk of insolvency. Moreover, the Basel capital adequacy norms have also brought about a standardization in the approach the banks take to measure, mitigate and manage their risks with adequate capital to withstand any type of unexpected events. This course will introduce the students to the risk management process in a typical bank which consists of risk identification, its measurement, and mitigation. The students will learn the key risks faced by the banks and how those are measured. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Intended learning outcomes

- Identify the different types of risk exposures of a bank;
- Assess these risks, i.e. measure these risks and calculate the capital requirement on account of these risks
- Evaluate the risk based performance of banks
- Identify data requirements and use of alternate analytical models to quantify risks.
- Apply different types of risk management techniques such as use of financial derivatives and ALM to manage risk.
- Implement best of class risk management practices and processes in a banking organization.

Course content

- **Introduction to risk management in Banks-** Risk Management Concept and the importance of risk management. Definition of the various risks faced by a bank – Credit Risk, Market Risk, Operational Risk, Interest Rate Risk, Liquidity Risk, Asset Liability Management (ALM), and Concentration Risk; description of the risk management functions in a bank.
- **Risk management process in a bank and regulatory approach to risk management** – Identification of risks, risk quantification, risk policy formulation, risk management strategy formulation and risk monitoring. Basel I, II and III norms and its adoption by RBI.
- **Liquidity risk & Interest rate risk (banking book)** – What is liquidity and sources of liquidity, relationship of liquidity risk to other banking risks; liquidity risk and Asset Liability Management (ALM). Defining interest rate risk in banking book and its measurement – Gap analysis model; duration model; mitigation methods – price matching and maturity matching
- **Market Risk Management** – Market risk and its types; measurement of market risk; risk metrics; Daily Earnings at Risk (DEaR) and Value at Risk (VaR); different approaches to measurement – historical simulation approach, the Monte Carlo simulation approach and parametric VaR Method; Managing Market Risk – New Basel Capital Accord and application to Financial Derivatives
- **Credit Risk Management-** sources of credit risk information, asset classification, measures of credit risk, estimation of credit losses; tools of credit risk mitigation/management techniques/models; accounting treatment
- **Operational Risk Management-** Building block for Enterprise Risk Management (ERM), operational risk measurement and management techniques/models
- **Other topics** – 2008 Financial Crisis and its impact: innovations in financial markets; failure of risk assessment; interbank liquidity; regulatory changes post crisis, Economic capital, risk adjusted performance measurement; risk based pricing, use of financial derivatives to mitigate risk, credit derivatives

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Financial Institutions Management: A Risk Management Approach	Anthony Saunders Marcia Millon Cornett	McGraw Hill	8th
Reference Books				
1	Analyzing and Managing Banking Risk: A Framework for Assessing Corporate Governance and Financial Risk	Bratanovic Myilibrary Van Greuning Brajobic Bratanovic Greuning	Williamson Books	2nd
2	Risk management and financial Institutions	John C. Hull	Wiley	Latest
3	Managing Banking Risk	Sonja Brajobic Bratanovic, Hennie Van Greuning	Jaico	1st
4	Risk Management in Banking	Joel Bessis	Wiley	Latest
5	Theory and Practice of Treasury and Risk Management in Banks	IIBF Mumbai	Taxman	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62220	Fixed Income and Alternative Investment	1.5	0	0.5	2

Introduction

Fixed income securities are popular among investors for its assured return. Further, most of those instruments are presently traded in the market providing liquidity to the investors. Investment in Real estate, commodities, hedge funds and private equity is also gaining momentum as alternative avenues against stocks and bonds. Students should acquire knowledge in this emerging area to work effectively in the financial market. The course is designed to provide knowledge on these products and their valuation. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Intended learning outcomes

- Understanding the nature of fixed income securities.
- Gaining knowledge on different kinds of such securities.
- Developing awareness on alternative investment avenues in the market.
- Learning to value the fixed income and alternative investment instruments.

Course Contents:

- **Fixed Income Securities:** Nature and characteristics of fixed income securities, bond indenture, covenants in bond issue, different kinds of bonds, bonds with embedded options, cash flow structure of a bond, bonds with contingencies, global fixed income market, fixed income indices, investors in fixed income securities, primary and secondary bond market, sovereign bonds, corporate bonds, short term financial arrangements, credit rating mechanism, Agencies in Credit rating, Efficacy of Credit rating.
- **Valuation of Fixed Income Securities:** Bond Pricing, Yield to Maturity, Yield Curve, Computing forward rates, Relationship between Spot and Forward rates, Swap rates, Term structure of interest rates: The Cox-Ingersoll-Ross (CIR) Model, Arbitrage-Free Models, Yield curve factor model, Monte Carlo Method; Interest rate trees, Calculation of spot rate, forward rate and yield to maturity.
- **Hedge Funds, Private Equity and Commodities:** Derivative transactions, Risk and Reward in Derivatives, Derivative Strategies, Hedge Fund risks, Hedge fund strategies, hedge fund valuation, Private Equity: Leveraged Buyout, Venture Capital, strategies and consideration in private equity investment. Commodities: Commodities Derivatives, Prices of Commodities, Pricing of commodities future contracts.
- **Real Estate and Infrastructure:** Real Estate Investment: Characteristics, types, risk, benefits; Valuation of Real Estate: Income Approach, Capitalization method, DCF Method, Cost Approach, Infrastructure Investment; REIT.
- **Regulatory issues** and Due Diligence in Alternative Investments

Text and reference books

Text Book					
1	The Handbook of fixed income securities	Frank J. Fabozzi,	Tata McGraw Hill	New	7th
Reference Books					
1	Bond Markets: Analysis and Strategies	Frank J. Fabozzi,	Pearson, Delhi	New	2010
2	Investment Analysis and Portfolio Management	Prasanna Chandra	Tata McGraw Hill		3rd
3	Private Equity Valuation	Yves Courtois	Tim Jenkinson		
4	Investing in Commodities	Ronald G. Layard-Liesching	CFA Institute		

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62221	Financial Markets and Regulation	1.5	0	0.5	2

Introduction

The course introduces the general concepts of financial markets and how these markets are regulated. This course will provide an understanding of the functions, and operations of the financial markets and institutions operating in India. It explains the role of financial system on economic development. Various conceptual issues related to risk and return, the role of regulatory bodies, mechanism of commercial banking, operations of insurance companies and mutual funds are discussed elaborately. It also describes the importance of small savings, provident funds, pension funds and credit rating agencies. The course provides a comprehensive overview and systematic evaluation of the mainstream markets of various financial instruments such as call money, bond, stock, derivatives and exchange rate. The subject will be discussed with the help of classic and latest cases available in HBS publishing.

Intended Learning Outcomes

- Understand the importance of the Financial Markets
- Gain knowledge about the key institutions and participants in these markets
- Appreciate the role of financial market regulators
- Learn institutional details about the operation of the different financial markets
- Understand the features and operational details of instruments traded in these markets

Course Contents

- **Introduction to Financial System and Economic Development:** Economic role of financial markets; Indicators of Financial Development; Regulatory institutions
- **Concepts Related to Financial Markets and Institutions:** Risk – return relationship; Asset Pricing Models; Valuation of Assets
- **Theories of Level and Structure of Interest Rate:** Factors affecting interest rates; Impact of Monetary Policy, Duration & Convexity; Zero Coupon Yield Curve
- **Financial Regulations and Regulatory Institutions in India:** Economics of regulation of financial markets; Role of RBI, SEBI, IRDA, and PFRDA; Operating Procedures of Monetary Policy; Corporate Governance and SEBI
- **Financial Market Participants:** Commercial Banks; Provident Funds, Pension Funds, Insurance Companies; Mutual Funds, Venture Capital Funds, Hedge Funds and other Collective Investment Schemes
- **Money Markets in India:** Call Money Market, Treasury Bill, Commercial Paper, Certificate of Deposit
- **Bond Market:** Bonds and Debentures; Bond Features, including embedded options; Bond Price Volatility; Government Security Market; Corporate Bond Market; Credit Rating and Price of Bonds
- **Classification of Stock Market and Securities:** Stock Exchanges; IPO and FPO; Stock Market Indices; Market Micro-Structure in Stock Market
- **Commodity Derivatives:** Contract types, Commodity Futures; Market micro-structure; Limitations of Indian commodity markets
- **Foreign Exchange Market:** Foreign Exchange Market Structure; Risk Management in Foreign Exchange Market; Exchange Rate Determination; Foreign Capital – FDI & FII; Central Bank Intervention in Foreign Exchange Market; Futures, Swaps and Options in Foreign Exchange

Textbook and Reference Books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Financial Markets And Institutions	Frederic Mishkin and Stanley Eakins	Pearson Education	8th
Reference Books				
1	Financial Institutions and Markets: Structure, Growth and Innovations	L.M. Bhole and J. Mahakud	McGraw Hill	6th
2	Financial Institutions & Markets	Jeff Madura	Cengage	10th
4	Analysis of Investments and Management of	Frank Reilly and Keith	Cengage	10th

	Portfolios	Brown		
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Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62222	Quantitative Finance Using R	1.5	0	0.5	2

Introduction

The quantitative finance is a field of applied quantitative techniques concerning the financial market and corporate finance. The course includes numerous mathematical models and tools for financial analytics. In the age of automation and artificial intelligence, the financial data analysis is paramount with development of sophisticated packages like R and Python. In view of the recent demand and advancement of finance domain, this course focuses to cover the financial data analysis using R package. The course starts with the finance preliminaries and further includes the basic mathematical and excels applications in finance. The advance analytical tools in R package and the machine learning application in finance are the focal point of the course.

Intended learning outcomes

- Data structure in financial market and corporate finance
- Seminal works in finance and its application with real time data
- Excel application in investment decision
- Financial data analysis using R-package
- Application of machine learning techniques in financial decision making

Course content

- **Module 1:** Quantitative Finance Preliminaries- data analysis methods in investment finance and corporate finance, use of discounting and compounding methods, valuation methods, Pro-forma financial statement modeling, mean and variance (single & portfolio), variance & co-variance matrix, efficient portfolio, market models including single factor and three factor models, beta estimation, security market line; market and corporate finance forecasting; other preliminary model and concepts of quantitative finance.
- **Module 2:** Financial Modeling in Excel- excel functions for data screening, macros, vlookup functions, statistical functions in excel, excel VBA and random number generator, data tables and other basic excel applications in finance. In addition to the basic mathematical functions, modern spreadsheets provide built-in functions for common financial and statistical operations; types of charts (e.g., scatter diagrams, forecast charts, error patterns, and downside risk curves).
- **Module 3:** Introduction to R application in finance- financial data structure and R functions in data loading, data screening and charting & plotting of financial data for analysis; excel and R integration in data transfer; forecasting tools in R- advanced tools like EGARCH & VGARCH etc., back testing, volatility forecasting; event study in finance; portfolio optimization, asset pricing models- capital asset pricing & arbitrage pricing models; risk management- Value at risk, parametric VaR, historical VaR, derivative pricing models- black scholes model, binomial models; econometrics and wavelet analysis and other advanced time series models.
- **Module 4:** Financial Machine Learning- application of machine learning methods using real life financial data- logistic regression and neural network, deep neural network, K means algorithm, K nearest neighborhood, support vector machine; decision tree, random forest. Back testing with cross validation, training and testing of data; and other applications of machine learning in financial data.
- **Module 5:** Dataset Analytics and Risk measurement-Data Exploration using Fundamentals. Technical analysis. Gauging the market sentiment. Simulating Trading Strategies. Pairs Trading. Markowitz Mean-variance optimization.

Textbook and Reference Books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Financial Modelling	Simon Benninga	MIT Press	Latest publication

Reference Books				
1	Applied Quantitative Finance: Theory and Computational Tools	Härdle, W., Kleinow, T., Stahl, G		
2	An introduction to Quantitative Finance	Stephen Blyth	Oxford University press	
3	Advances in Financial Machine Learning	Marcos Lopez de Prado	Wiley Publication	
4	Financial Analytics with R	Mark J. Bennett, Dirk L	Cambridge University Press	

Course Code	Name of the course	Credits			
		L	T	P	Total
BM 6208	Corporate Tax Planning	1.5	0	0.5	2

Introduction

Every commercial organization has to follow the tax regime of a country and pay the applicable tax in the course of its business activity. In India, a business house is liable to pay direct and indirect taxes payable on profit and the sales figures respectively. The bottom-line of a business is affected by the incidence of such taxes and managers are often expected to plan the tax to enhance the performance of the organization. Management students are generally seeking employment in organized sector of the economy which constitute around 50% of the GDP. Hence, knowledge on corporate taxation helps the students in managing the day to day transactions in the organization and enhances the performance of the corporate house through tax planning. Hence, Corporate Taxation is an integral part of management education. The course aims to provide knowledge to the students about provisions of corporate taxation in practical terms and use of the tax planning methods to minimize tax liability. It familiarizes the students in filing GST and IT returns, account for expenses with proper compliance of tax laws, and understand the implication of tax in investment analysis.

Learning Outcome

After the course, students can learn the following:

- Basics of Direct Tax, incidence of tax, and discharge of tax liability.
- The importance of tax planning for better performance.
- Proper tax compliance to avoid penalty and corporate mis-governance
- Impact of tax on various financial performance parameters.

Course Content

• Direct Tax Provisions

Development of Income Tax and Corporate Tax, Key definitions; meaning of assessee, previous year, assessment Incidence of tax for Public Limited, Private Limited and Foreign Companies, New provision of Income Tax suggested in Budget 2020, Accrual Vs cash transactions, Income exempt from tax, Incidence of tax on account of Profits & Gains and Capital Gain, Advance tax liability, Due Date for payment of Advance Tax, Applicability of TDS, TDS Rate, Income Tax Return forms for Corporate. Basic of DTA, Countries under DTA, Relief under section 90, 90A

Corporate Tax planning

Minimum Alternate Tax, Dividend Distribution Tax. Deferred tax liabilities, Carry Forward and Set off Business Loss, Choosing between new and old tax structures, Tax provisions for start up companies, Capital structure and tax planning

Depreciation

Rate and incidence of depreciation as per GAAP and IT Act, Treatment of Sale and Purchase of Asset, Block of Assets, Depreciation as a tax planning tool, Tax planning opportunities through new depreciation rules, Tax planning in new investment

Business Restructuring

Amalgamation, Transactions not treated as Amalgamation, Asset Transfer, Tax advantage/

disadvantage of a merger, demerger, discontinued business, spin-off, share buyback,

Indirect taxation

Constitution and GST, Key terms definition; Goods, Services, Supplier, Supply, Deemed Supply, Exempt Supply, Aggregate Turnover, Business, Place of Business, Capital Goods, Consideration, E-Commerce, Input Service Distributor, Reverse Charge, Person liable to registration, person not liable for registration, Compulsory registration in certain cases, Procedure for registration, Cancellation or suspension of Registration, Scope of Supply, Tax liability on Composition and mixed supplies, levy and collection.

- **Contemporary developments in corporate taxation Text**

Books

S N	Title	Author	Publisher	Edition
1	Corporate tax planning and business tax procedures (Main Text)	Monica Singhania, Vinod K Singhania	Taxmann	Latest Edition
2	Goods and Service Tax	Dr. Jyoti Rattan and CA. AlokKrishan	Bharat Publication	Latest Edition
3	Students' Guide to Income Tax including GST	Vinod K. SinghaniaMonica Singhania	Taxmann	2020 University Edition

Reference Books

S N	Title	Author	Publisher	Edition
1	Direct Tax Law and Practice	Vinod K. Singhania	Taxmann	Latest
2	Income Tax Law	Chaturvedi&Pithisaria	LexisNexis	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62224	Behavioral Finance	1.5	0	0.5	2

Introduction

Behavioral finance recognizes that our abilities to make complex financial decisions are limited due to the biases and errors of judgment to which all of us are prone. This course introduces cognitive, emotional biases, discusses the impact of such biases on the financial decision-making, and explores the behavior of individual investors, fund managers and corporate managers.

Learning Outcome

Understand and behavioral finance perspective, traditional finance perspective, cognitive biases and errors of judgment that affect financial decisions.

Evaluate behavioral influences involving individual's investment decisions and corporate (executive) financial decisions

Course Content

Module 1- Behavioral Finance: An Overview.

Concept and Theoretical framework & Application of BF, Characteristics & Dimensions of BF, Behavioral Finance & Investment decisions. History of Behavioral Finance, Psychology: Concept, Nature, Importance, The psychology of financial markets, the psychology of investor behavior, Behavioral Finance Market Strategies, Traditional Vs Behavioral Finance- Efficient market hypothesis & alternate market hypothesis; Morality & Ethics - Why do they matter in the business world? Contextual and emotional biases.

Module 2- Foundations of Behavioral finance-

Behavioral Finance Market Strategies, Prospect Theory, Loss aversion theory under Prospect Theory & mental accounting—investors Disposition effect. Market Anomalies: Causes, Evidences of Calendar Effects, January effect, Weekend effect, Turn-of-the year effect. Fundamental Anomalies. Technical Anomalies.

Heuristics & Behavioral Biases-overreaction, under reaction, herding, anchoring, framing, mental accounting and regret theory.

Module 3 - Behavioral aspects of investing-

Investor Behavior, Market Outcome, BB & K Five way model, Value Investing. External factors and investor behavior: Fear & Greed in Financial Market, emotions and financial markets: geomagnetic storm, Statistical methodology for capturing the effects of external influence onto stock market returns. Incorporating Behavioral Finance in Practice.

Module 4 – Behavioral Corporate Finance

Behavioral corporate finance: Empirical data on dividend presence or absence, ex- dividend day behavior. Timing of good and bad corporate news announcement.

Systematic approach of using behavioral factors in corporate decision-making. Agency Conflicts & Corporate Governance, Valuation. Capital Budgeting, Behavioral biases and corporate decision-making - Managerial overconfidence, Investment & Overconfidence.

Text Book:

Behavioral Finance	Prasanna Chandra	Mc Graw Hills	2nd
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Reference Book:

Title	Author	Publisher	Edition
Behavioural Finance	Lucy F. Ackert, Richard Deaves, Cengage.	Cengage	2nd Edition
Understanding Behavioural Finance	William Forbes	Wiley Publication	1 st Edition
Behavioural finance: Investors, Corporations and markets.	Baker, K., Nofsinger, J.R	Wiley Publication	1 st Edition

Area: Human Resource Management

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60103	Organizational Behavior	2	0	0	2

2. Introduction

Understanding the dynamics of individual and interpersonal behavior in organizational setting; developing students' knowledge and competence to deal with human problems of management; developing students' awareness and insight for personal and professional growth and finally making students aware about group formation, dynamics, functions and its effective management.

Intended Learning Outcomes

- Students will be able to understand the fundamental concepts of individual, group and organizational behavior
- Students will be able to understand and relate to those micro aspects of individual behavior such as learning, conditioning, perception etc. that might impact upon the larger organizational context
- Students would be able to understand the various personality types, attitudes and utilize the knowledge for augmenting the performance in the organization.
- Students will understand and be aware about group formation, group dynamics, functions and the challenges of group management
- Students will be able to handle conflict resolution techniques in a more effective manner.
- Students will be able to understand various nuances involved in leadership and would utilize the same in order to adorn leadership positions.

Course Content

- Introduction to OB & Diversity in Organization: Management Functions: Management roles & skills, Importance of OB, challenges & opportunities of OB, Diversity, Biographical characteristics affecting employee performance & understanding
- Attitudes & Job Satisfaction: Types of Attitudes, Cognitive Dissonance Theory, Measuring Job Satisfaction, The effect of Job Satisfaction on Employee Performance, Employee Dissatisfaction, Global implications
- Emotions & Moods: Basic Emotions, Basic Moods, Emotional Labour, Emotional Intelligence, OB Application of Emotions & Moods, Global Issues
- Personality & Values: Personality, Myers-Briggs Type Indicator The Big Five Personality Model, Importance of values, Types of values, Values across cultures (Global Implications), Self-Assessment test on Personality
- Perception & Individual Decision Making: Factors Influencing Perception, Person Perception, Decision making in Organization, Ethics in Decision Making
- Motivation: Brief on theories of motivation & concepts and application: Early theories of motivation: Maslow's Hierarchy of Needs, Theory X and Theory Y, Two Factor Theory, McClelland's Theory of Needs, Contemporary theories: ERG theory, Self-efficacy theory, Equity theory, Cognitive Evaluation theory, Goal setting theory, Expectancy theory, Job characteristics model, Rewards to motivate employees
- Concepts of groups, individual & the group, Group cohesion, development, structure and influence: Concepts of group, The nature of group dynamics, The individual and the group, Group formation, Group cohesion and development, Group structure: role, norm, status, Group influence, Social loafing, Sources of influence
- Group Decision Making: Group vs. the Individual, Group Think & Group Shift & Group decision making techniques, Effective Groups, Self-Managing Teams, Advantages and Disadvantages of Groups,
- Understanding work teams: Difference between groups and teams, Types of Teams, Creating Effective Teams, Turning Individuals into team players.
- Communication: Basics of Communication, Process & Functions of Communication, Interpersonal Communication, Barriers to Communication, Organizational Communication, Gender differences in communication, Silence as Communication, Politically Correct Communication
- Leadership and issues in Leadership: Brief on theories, Charismatic and Transformational Leadership, Authentic Leadership, Trust and Servant Leadership, Leader as the mentor
- Power & Politics: Bases of Power, Dependency: The Key to Power; Power Tactics; Power in groups; Unequal power in the workplace; Politics: Power in Action; Causes and consequences of political behaviour

- Conflict & Negotiation: Roots of conflict; The conflict process; confrontation and escalation; Negotiation: process, issues, cultural differences in negotiation, conflict resolution, third party negotiation
- Stress Management: Stress, potential sources of stress, Consequences of stress, Managing stress.

Textbook and Reference Books

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
	Organization Behavior	Robbins, S., Judge, T.A. and Vohra, N.	Pearson	18 th
Reference Books				
1	Organization Behavior	McShane S., and Von Glinow, M.	TMH	3 rd
2	Organizational Behavior	Uma Sekharan	TMH	2 nd
3	Organization Behavior	Fred Luthans	TMH	10 th

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60104	Organization Theory	2	0	0	2

Introduction

Understanding and designing organization structure and appreciating the impact of size, strategy, technology, environment, power and culture on organizational dynamics and its effective functioning.

Intended Learning Outcomes

- Understand the evolution of organizations and conditions of organizational effectiveness
- Understand the components of organization structure and design and the typologies of organization structures
- Understand the impact of organizational size, technology and environment on organizational structure.
- Understand the different organizational design options along with the strengths and weaknesses.
- Discuss organizational functioning in varied environments
- Understand the concepts of organizational change and organizational culture.

Course Content

- Organization Theory and Evolution
- Dimensions of Organization Structure
- Organization Effectiveness
- Strategy and Organization Structure
- Size and Organization Structure
- Technology and Organization Structure
- Power-Control
- Organizational Design Options
- Bureaucracy
- Adhocracy
- Managing Environment
- Organizational Change
- Managing Organizational Culture and Organizational Evolution

4. Textbook and Reference Books

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
	Organization Theory	Robbins, S. and Matthew, M.	Pearson	3 rd
Reference Books				
1	Structure in Fives Designing Effective Organizations	Mintzberg, H.	PHI	3 rd
2	Organizational Theory and Design	Daft, R.	Cengage	13 th
3	Organizational Theory and Design	Jones, G.	Pearson	7 th

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62102	Human Resource Management	1.5	0	0.5	2

Introduction

Today, HR managers play a major role in strategic decision making and are evolving as business partners. At the same time, Human Resource Management is no more limited to only HR personnel. Rather, every manager needs to work on it along with the HR department. Managers who are good at HRM can use their workforce in a more efficient and effective manner to gain competitive advantage for their organizations. The course aims to equip students with the tools and practices of HRM and help them appreciate the change they can affect in an organization by managing people in the best possible manner. It also aims at providing an overview of the current people challenges that organizations/ managers are facing today.

Intended Learning Outcomes

- Acquainted with basic tools and techniques of HRM like job evaluation, assessment center, competency mapping etc.
- Relate to the basic HR functions and processes like Recruitment, training, performance management etc.
- Understand the role of HR in today's corporate world, challenges and how to address them while well-guarding employee sensitivities.
- Understand the legal framework of HRM.
- Understand the importance of harmonious Employee Relations.

Course Content

Module 1: HRM & Strategic HRM

- Introduction - Journey of HR from personnel management to strategic HRM, Environmental Influences on HRM, Functions of HR in organizations, Modern day challenges to HR
- Strategic HRM – Evolution of HR as a business partner, Need for Strategic HRM, HR Metrics, Using the VRIO Framework for competitive advantage

Module 2: HR Processes

- Job Analysis – What is Job Analysis? Sources of data collection & methods of conducting a job analysis, Outcomes of a job analysis: Job description and job specification.
- Job Evaluation - What is Job Evaluation? Outcomes of job evaluation: Job banding leading to pay bands, Different methods of JE : Ranking, classification, Factor comparison and point method
- Manpower Planning - Concept, Objectives & Methods
- Performance Management - Design principles of PMS, Stages of a PMS cycle - Goal setting, SMART goals, KPA and KPI, Balanced score card & Goal cascading, Mid-year review and feedback; Different rating scales – Graphic rating, Forced choice, Mixed standard scale, BARS, BOS; Methods of evaluation – rating, ranking, MBO; Rater errors – Halo effect, Horn effect, error of central tendency, leniency/ strictness error, recency error, attribution bias, similar-to-me error, stereotyping; Concept of Normalization – Need & process; Competency and assessment center
- Compensation & benefits' Administration – Types of Compensation, HR Metrics & Compensation, Legal Effects on Pay System, Base Pay System, Components of Pay Structures, Fixed & variable Pay, Types of benefits
- Recruitment and Selection – Concepts, process, methods & evaluation
- T&D and Career Development – Concept, Methods, calculating training effectiveness using Kirkpatrick's model, Career Planning, Types of Career Paths, Schein's Career anchors and its implications on jobs
- Employee engagement - Engagement drivers at work place, Role of HR in enhancing engagement, Challenges in engaging millennials

Module 3: Industrial Relations

- Introduction – IR scenario in India: Current issues and future challenges, Industrial disputes and preventive machinery and settlement
- Trade Union & Collective Bargaining – The Trade Union Act, 1926; Union recognition and problems, the process of bargaining, Conditions essential for effective bargaining
- Employee Grievance Management and Discipline

Textbook and Reference Books

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
	Human Resource Management	Dessler, G.	Pearson	15 th
Reference Books				
1	Principles of HRM	Bohlander, G.	Cengage	16 th
2	Human Resource Management	Sanghi, S.	Vikas	2 nd

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62115	HR Planning and Selection	1.5	0	0.5	2

Introduction

Manpower Planning (MP) which is also called as Human Resource Planning consists of putting right number of people, right kind of people at the right place, right time, doing the right things for which they are suited for the achievement of goals of the organization. The course aims to teach students strategies for acquisition, utilization and development of human resources. Students will also learn replacement planning which analyses labour turnover, development and maintenance of employee programmes and assess the future needs of the organization so that sufficient number of persons may be procured well in time. With the talent war growing aggressive in present times, Selection has assumed strategic importance. Today, a skilled manpower is being considered the greatest competitive advantage for an organization. This course intends to familiarize students with the various aspects (process, methods and tools used) of selection.

Intended Learning Outcomes

- Students shall be able to understand the importance of manpower planning and the impact on other functions if this planning is not carried out with utmost care.
- Students shall be able to link the process with other HR functions including recruitment, staffing, training, performance management, etc.
- Students shall be able to analyze current manpower inventories and match profiles
- Students shall be able to design Job Description & Specification formats for various roles.
- Students shall be able to forecast manpower – both demand and supply using different techniques best suited to the role of the vacancy in hand
- Students shall be equipped with various selection procedures practiced in industries.
- Students shall be able to understand latest selection tools in the corporate sector.

Course Content

- Forecasting Process, Demand Forecasting, Supply Forecasting
- Career Planning & Development
- Succession Planning
- Downsizing & Restructuring
- Mergers & Acquisitions
- Outsourcing
- Job Analysis and Profile Matching
- Hiring Process & Hiring Decision
- Internal & External Hiring
- On-boarding and Induction

4. Textbook and Reference Books

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
	HR Selection	Gatewood, R. Hubert, S.I and	Cengage	8 th

		Barrick, M.R.		
Reference Books				
1	Strategic Human Resource Planning	Belcourt, M. McBey, K.J. and Yap, H.M.	Cengage	5 th
2	Human Resource Planning	Bhattacharya, D.K.	Excel	3 rd
3	Staffing Organization	Herbert G. Heneman III, Timothy A. Judge	McGraw Hill	5 th

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62116	Labor Laws and Industrial Relations	1.5	0	0.5	2

Introduction

To familiarize the students with legal framework of relevant HR and Labour Laws affecting the Indian industries. Knowledge of legal aspects governing the labour administration and industrial relations is essential for all HR managers. Every HR manager must know the labour laws of that country where he is working, because most of the core HR functions are linked and according to the labour laws of concerned country. Maintaining proper labour relations between the employer & employee and between employees is imperative for organizational performance.

Intended Learning Outcomes

- Students should be able to articulate the major Industrial concepts and statutes learnt through the course.
- Students should be able to appreciate the importance of labour in Indian economy.
- Students should be able to appreciate and relate to the structure, compensation and trends in the labour laws in India.
- Students should be able to understand the role of labour administration in Industrial Relations.
- Students should be able to understand the key issues and the paradigm shifts in labour policy.

Course Content

- Introduction to Labor - Occupational Structures in India, size of labor force, Features of Industrial Labor.
- The Trade Union Act, 1926
- Industrial Disputes Act, 1947
- Shops & Commercial Establishment Act – major States' specific
- Industrial Employment (Standing Orders) Act, 1946
- The Factories Act, 1948
- Contract Labor (Regulation & Abolition) Act, 1970
- The Payment of Bonus Act, 1965
- The Employees' State Insurance Act, 1948
- The Workmen's Compensation Act, 1923
- The Payment of Gratuity Act, 1972
- The Employees' Provident Funds And Miscellaneous Provisions Act, 1952
- The Payment of Wages Act, 1936
- Minimum Wages Act, 1948
- Equal Remuneration Act, 1976
- Building & Other Construction Workers' Act, 1996
- New Wage Code
- Negotiation and Collective Bargaining
- Quasi Judicial function, Discipline
- Labour Turnover and Absenteeism

Textbook and Reference Books

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
1	Labor And Industrial Laws	P.K. Padhi	PHI	Second Edition
2	All Bare Acts			
3	Industrial Relations	C S Venkata Ratnam	Oxford	Second Edition
Reference Books				
1	Labour And Industrial Laws	K. M. Pillai	Allahabad Law Agency	18 th Edition
2	Industrial Relations, Trade Unions & Labour Legislations	H.L. Kumar	Universal Law	4 th Edition
3	Industrial Law	P. L. Malik	Eastern Book Company	25 th Edition
4	Labour And Industrial Law	S. N. Mishra	Central Law	27 th Edition

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Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62111	Performance Management Systems	1.5	0	0.5	2

Introduction

To acquaint students with the concept, processes and mechanics of performance management system practiced in business organizations, and to enable them to learn the key concepts in measuring group and organization performance.

Intended Learning Outcomes

- Students will be aware of, understand and appreciate the importance of a robust performance management system in organizations
- Students will understand the entire cycle of the performance management process i.e. the framing of goals, key result areas, appraisal and its various methods, review, monitoring and renewal
- Students will be able to understand the measures of team and organizational level performance
- Students will be able to understand the process of potential appraisal and use of automation in PMS
- Students will be able to identify and understand the latest trends, issues and challenges in performance management and compensation systems in organizations today.

Course Content

- **Module 1: Introduction to Performance Management Systems.** Introduction to PMS, Performance Planning
- **Module 2: Process of Performance Appraisal and Performance Review.** Process of Performance Appraisal. Absolute and Relative Methods of Performance Appraisal. BARS, MBO and 360 degree. Performance Management Review: Process and Techniques
- **Module 3: Measuring Individual /Group/Organizational Performance.** Performance Based Compensation. Team Performance Management. Balanced and HR Scorecards
- **Module 4: Future of PMS.** Performance Management and Mentoring. Potential Management. Use of automation in PMS. Contemporary issues in PMS

Textbook and Reference Books

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
	Performance Management Systems	Bagchi, S.N.	Cengage	2 nd
Reference Books				
1	Performance Management System	Rao, T.V.	Sage	2 nd
2	Performance Management	Cardy, R.L.	Prentice Hall of India	2 nd
3	Performance Management	Aguinis, H.	Pearson	3 rd

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62113	Compensation and Reward Management	1.5	0	0.5	2

Introduction

To acquaint students with the concept, processes and mechanics of compensation management system practiced in business organizations, and to enable them to learn the key concepts in reward management and benefits administration.

Intended Learning Outcomes

- Gasp the basic components of designing a pay system keeping in mind the issues of external and internal equity in organizations
- Understand and develop an appreciation for the various incentive schemes –individual, team and organizational.
- Identify and understand the latest trends, issues and challenges in compensation systems in organizations today.

Course Content

- **Module 1: Introduction to Compensation Management.** The World of Pay and Compensation, Legal Issues in Compensation Management
- **Module 2: Internal and External Equity in Compensation.** Introduction to job evaluation, Hay method of job evaluation, Surveying market pay and compensation practices, Design of Pay Structure
- **Module 3: Benefits and Reward Management.** Measuring and paying for performance, Individual incentive plans, Gainsharing plans, Long term incentives, Benefits and services
- **Module 4: Future of C&RM.** Executive and International Compensation, Use of automation in compensation, Future of C&RM

4. Textbook and Reference Books

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
1	Compensation Management	Sharma, R.C. and Sharma, S.	Sage	1 st
Reference Books				
1	Compensation Management in a knowledge-based world	Henderson, R.	Pearson	10 th
2	Compensation	Milkovich, G. Gerhardt, B. and Newman, J.	McGraw Hill	12 th

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM68108	Managerial Effectiveness	Sessional			2

Introduction

This program aims to help students to understand
 Their strengths to design a map of their life and objectives therein Inner
 potential through psychometric tools
 their relationship orientation, emotions and impact on their environment how
 to take appropriate decisions using different tools
 conflict resolution styles contextual to their life and organization

Intended Learning outcomes

- Identify their strengths in order to design an autobiographical map of their past, present and future.
- Understand their inner potential on undertaking certain psychometric profiling.
- Understand their relationship orientation and emotional intelligence
- Identify the process of making appropriate decisions conducive to their life and organizational environment

Course Content

- Understanding the context
- Managing People
- Managing Tasks
- Managing Self
- Managing Conflict

Textbook and Reference Books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Leadership by Choice: Increasing Influence and Effectiveness through Self-Management	Papp, Erich	John Wiley & Sons	4 th
Reference Books				
1	Quiet Leadership	David rock	HarperCollins Publishers	Kindle Edition
2	7 habits of highly effective people	Stephen covey	Free Press	4 th
3	Movie Mind directing your mental cinema	Michael hall	Neuro-Semantic Publications	3 rd

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62117	HR Value Proposition and HR Scorecard	1.5	0	0.5	2

Introduction

One of the fundamental purpose of business is to create value for its stakeholders. For HR to deliver value, it needs to define its receivers and how to create value for them, or it won't survive. This is the fundamental premise on which HR Value propositions are based. To be able to deliver value, the HR professionals need to understand the business realities; recognize the stakeholders; focus on HR practices that deliver value; create a strategy and structure that will deliver value; develop right competencies to deliver value; and create appropriate metrics to measure how value is delivered.

Intended Learning Outcomes

- Understand the concepts concerning HR value proposition and the associated measurement metrics.
- Apply the learned concepts to access business realities, deliverables for stakeholders, appropriateness of existing HR practices, level of existing competencies and nature of strategy and structure.
- Analyze given contexts to determine drivers and barriers to creating value for stakeholders.
- From a given context both involving opportunities and challenges, create alternatives to deliver value, evaluate the alternatives and choose the most appropriate alternative to deliver value.
- Create HR scorecards capturing HR deliverables, measures of high performance work- process elements, HR system alignment and HR efficiency measures.

Course Content

- **Accessing the external business realities:** Recognise external business realities, adapt HR practices and allocate HR resources accordingly.
- **Serving external and internal stakeholders:** Create market value for investors by increasing intangibles; increase customer share by connecting with target customers; help line managers deliver strategy by building organisation capabilities; clarify and establish an employee value proposition and enhances individual abilities.
- **Creating HR practices:** Manage people processes and practices in ways that add value; manage performance management processes and practices in ways that add value; manage information processes and practices in ways that add value; and manage work- flow design and processes in ways that add value.
- **Building HR capabilities:** Align organisation to the strategy of the business and create a clear strategic planning process for aligning HR investments with business goals.
- **Ensuring HR professionalism:** Orient HR professionals to play clear and appropriate roles; build HR professionals who demonstrate HR competencies; and invests in learning and development of HR professionals.
- **Developing HR Scorecard:** Strategy maps- linking multiple perspectives that create value; and HR Scorecard- goals, objectives, measures, initiatives and required resources.

Textbook and Reference Books

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
1	HR Value Proposition	Ulrich, D. and Brockbank, W.	HBS Press	Kindle Edition
Reference Books				
1	The HR Scorecard: Linking People, Strategy and Performance	Ulrich, B.E. and Huselid, M.	HBS Press	Kindle Edition

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62107	Leadership for Corporate Excellence	1.5	0	0.5	2

Introduction

To enable the students to understand the basics of leadership attributes in general and the art of corporate leadership in particular. Understand how the leadership function contributes to the management of people and organizations. Develop insight into the practices associated with effective leadership. Pinpoint some of the knowledge and skills students' will need to become an effective leader and manager. Developing leadership skills that students' can apply outside the classroom.

Intended Learning Outcomes

- Enhance their Leadership Skills
- Develop emotional intelligence to become effective leaders
- Interpret the situational aspects of Leadership
- Communicate better in an organization
- Inculcate the nuances involved in becoming effective leaders.

Course Content

- The meaning and relevance of Leadership. The meaning of Leadership, The Impact of Leadership on Organizational Performance, Leadership Roles, The Satisfaction and Frustrations of Leadership, A Framework for Understanding Leadership
- Personal attributes of Leader. Personality Traits of Effective Leaders, Leadership Motives, The Influence of Heredity and Environment on Leadership, The Strengths and Limitations of the Trait Approach.
- Charismatic and Transformational Aspects of Leaders, The Meaning of Charisma, Types of Charismatic Leaders, Characteristics of Charismatic Leaders, The Vision Component of Charismatic Leadership, The communication Style of Charismatic Leaders, The Development of Charisma, Transformational Leadership, Concerns About Charismatic Leadership
- Leadership Actions, Attitudes, and Style, The Classic Dimensions of Initiating Structure and Consideration, Relationship- Oriented Attitudes and Behaviors, 360-Degree Feedback for Fine- Tuning a Leadership Approach, Leadership Approach
- How Leaders Respond to The Situation at Hand. Situational Influences on Effective Leadership Behavior, Fiedler's Contingency Theory of Leadership Effectiveness, The Path-Goal Theory of Leadership Effectiveness, The Hersey-Blanchard Situational Leadership Model, The Normative Decision Model, Cognitive Resource Theory : How Intelligence , Experience, and Stress Influence Leadership, Contingency Leadership in the Executive Studies, Leadership during a Crisis
- The Moral aspects of leadership. A sampling of Unethical Leadership behaviors, Leadership and Social Responsibility, Initiatives for Achieving Ethical and Social Responsible Organization, Ethical behavior and Organizational Performance.
- How leaders exert influence? A model of Power and Influence, Description and Explanation of Influence Tactics, Relative Effectiveness and Sequencing of Influence Tactics
- Enhancing teamwork within the group. Team Leadership Versus Solo Leadership, Advantages and Disadvantages of Group work and Teamwork, The Leader's Role in the Team-Based Organization, Leader Actions That Foster Teamwork, Outdoor Training and Team Development, The Leader-Member Exchange Model and Teamwork
- The Leader as a motivator and coach. Expectancy Theory and Motivational Skills, Goal Theory, Behavior Modification and Motivational Skills, Using Recognition to Motivate others, Coaching as a Leadership Philosophy, Coaching Skills and Techniques, Executive Coaching and Leadership Effectiveness
- Communicating with others and Resolving Conflict. Evidence About Communication and Leadership, Inspirational and Powerful Communication, Supportive Communication, Overcoming Cross-Cultural Communication Barriers, The Leader's Role in Resolving Conflict and Negotiating
- The Creative and Innovative aspects of a Leader. Steps in the Creative Process, Characteristics of Creative Leaders, Overcoming Traditional Thinking as a Creative Strategy, Organizational methods to Enhance Creativity, Self-Help Techniques to Enhance Creative Problem Solving, Establishing a Climate for Creative Thinking, Additional Leadership Practice That Enhance Innovation.
- Global and Cross-Cultural Leadership. The advantages of Managing for Diversity, Cultural Factors Influencing Leadership Practice, Cultural Sensitive and Global Leadership Skills, Leadership Initiatively for Achieving Cultural Diversity, Developing the Multicultural Organization

- Thinking Strategically and Managing Knowledge. The Nature of Strategic Leadership, Conducting a SWOT Analysis, A Sampling of Business Strategies formulated by Leader, Knowledge Management and the Learning Organization
- The development of Leaders and Succession planning and Followership. Development Through Self-Awareness and Self-Discipline, Development Through Education, Experience, and Mentoring, Leadership Development Programs, Evaluations of Leadership Development Efforts, Leadership Succession.
- How leaders Attain and Maintain power? Sources and Types of Power, Bases of Power and Transformational and Transactional Leadership, Tactics for Becoming an Empowering Leader,
Factors That Contribute to Organizational Politics, Political Tactics and Strategies, Exercising Control over Dysfunctional Politics

4. Textbook and Reference Books

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
1	Principles of Leadership	DuBrin, A.J.	Cengage	8 th
Reference Books				
1	The leadership experience	Daft, R.L.	Cengage	5 th
2	Seven Habits of highly successful people	Covey, S.	Franklin Covey & Co	4 th
3	Leadership: Myths and Realities	Allio, R.J.	Tata McGraw	
4	Leadership: Enhancing the lessons of Experience	Hughes, R.L., Ginnet, R.C., Curphy, G.J.	TMH	8 th

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62105	Organization Development and Change	1.5	0	0.5	2

Introduction

Organizations world over have a continuous need for adapting to the ever-increasing environmental demands and reinventing themselves for their sustenance and growth. The course is designed to make students appreciate the dynamics of organization during fast paced change and facilitate the needed effectiveness improvement process using behavioral science knowledge and theories of planned change.

Intended Learning Outcome

- To appreciate the origin and development of OD as a discipline
- To understand the nature of planned change and the essential competencies of an effective OD practitioner
- To familiarize with the process of organization development
- To help diagnose organizations and select an appropriate intervention to ensure alignment
- To apply OD in non-industrial settings such as health care, school system, public sector undertakings and family owned businesses

Course Content

- Introduction and overview of change and development
- Organizational Change – Types, Levers & Theories, Organizational Change – Process, Change Agents, Models of Designing & implementing Change, Resistance to Change, Consequences of Change
- Steps in OD: Entering and contracting; diagnosing organizations; diagnosing groups and jobs; collecting and analyzing diagnostic information; feeding back diagnostic information; designing interventions; leading and managing change; evaluating and institutionalizing OD interventions: human process interventions; techno-structural interventions; human resource management interventions; strategic interventions
- Emerging trends in OD – OD for economic, ecological and social outcomes
- The future direction in Organization Development

Textbook and Reference Book

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
	Organization Development & Change	Thomas G. Cummings & Christopher G. Worley	CENGAGE Learning	10 th
Reference Books				
1	Organization Development – Behavioral Science Interventions for Organization Improvement	Wendell L. French and Cecil H. Bell, Jr.	Prentice-Hall of India	6 th

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62118	HR Accounting and HR Audit	1.5	0	0.5	2

Introduction

The course is designed to enable students to understand through Human Resource Accounting (HRA), in financial terms, the effectiveness of the HR activities and the use of people in an organization. The course also aims to make students understand the importance of Human Resource Audit, which is an organized official process, conducted to ensure compliance and improve HR practices.

Intended Learning Outcomes

- Students will be able to understand that expenditures associated with human resources are reported as assets on the balance sheet in contrast to the conventional accounting approach which treats costs related to a company's human resources as expenses on the income statement that decrease profit.
- Students shall be able to relate people as the organizational resources.
- Students shall be able to analyze costs incurred by organizations to recruit, select, employ, train and develop employees and judge their economic value to the organization.
- Students shall be able to gauge the importance of HR Audit to ensure compliance, improve HR practices, train managers, prepare for potential audit or litigation, gain an understanding of department's environment and correct errors.

Course Content

- Human Resource Accounting – Meaning, Need and Objectives of HR Accounting
- Historical Development of Human Resource Accounting
- Cost of Human Resource – Acquisition Cost, Training and Development Cost and Additional Cost
- Benefits and Limitations of Human Resource Accounting
- Methods of Human Resource Accounting
- Statutory Provisions Governing HR Accounts
- Human Resource Accounting Practices in India
- Human Resource Audit – Meaning, Features, Objectives of HR Audit, Benefits and Limitations of HR Audit, Need and Significance of HR Audit
- Process of HR Audit
- Approaches of HR Audit
- Principles of Effective HR Auditing
- Role of HR Auditor
- Methods of Conducting HR Audit – Interview, Workshop, Observation, Questionnaire
- Components of HR Audit
- Areas Covered by HR Audit

3. Textbook and Reference Book

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
1	Human Resource Accounting in India	Suresh Kumar Pandey	Lambert Academy Publishing	First Edition
2	Compiled text material			
3	HRD Audit: Evaluating the Human Resource Function for Business Improvement	T V Rao	Sage	Second Edition
Reference Books				
1	Human Resource Accounting	Kanaka Raju K	Scholars' Press	First Edition

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62119	Human Resource Development (T&D)	1.5	0	0.5	2

Introduction

To enable students to understand the importance of employee training and development for attainment of business results and objectives, to develop in students the necessary competencies to research, design, develop, deliver and ultimately monitor training and developmental activities, processes and measure its impact on business results.

Intended Learning Outcomes:

- Students will be able to understand the importance of training and development in the management and growth of human resources in organizations
- Students will be able to understand and evaluate the differences between training and development, the application of concepts such as education and learning to organizations
- Students will be able to understand and demonstrate the learning on training need assessment and the design of generic and specific/customized training programmes.
- Students will be able to identify, understand and evaluate the different methods and techniques of training implementation
- Students will be able to understand the importance of the post training process such as training evaluation, cost benefit assessments and the need for the continuous transfer of learning

Course Content

- **Module 1: Introduction to Training and Development:** Introduction to T&D, Learning and Training, Motivation and Training, : TA and Trainer Styles
- **Module 2: Training Need Analysis and Design of Training Programmes:** Training Need Analysis, Training Design
- **Module 3: Training Implementation/Delivery and Training Evaluation:** Development and Implementation of Training, Off the job training, On the job training, Use of technology in training, Training Evaluation
- **Module 4: Cost Benefit Analysis of Training Programmes:** CBA, Future of T&D

Textbook and Reference Book

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
1	Managing Performance through Training and Development	Saks, A.M & Haccoun, R.R.	Cengage	8 th
Reference Books				
1	Employee Training and Development	Noe, Raymond	TMH	4 th
2	Training for Organizational Transformation	Lynton, R.P. & Pareekh, U.	Sage	3 rd
3	Effective Training: Systems, Strategies and Practices	Blanchard, P.N. & Thacker, J.W.	Pearson	4 th

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62120	Strategic Human Resource Management	1.5	0	0.5	2

Introduction

This course presents a thorough and systematic coverage of issues related to strategic human resource management

Intended Learning Outcomes

- Students will be able to think strategically and integrate the activities of HR with the organization's goals.
- Understand Human resource management at the backdrop of uncertainties
- Understand Models of strategy, the process of Strategic management
- Understand Importance of strategic planning for business success
- Understand Market driven strategy, Resource driven strategy.
- Impact of Geopolitics on Business

Course Content

- Challenges in strategic Human Resource Management:
- Impact of Geopolitics on Business
- Impact of Technology
- Challenges related to technology, behaviour , demographic change and diversity
- Importance of strategic planning for business success, Business strategy-Market driven strategy, Resource driven strategy
- The Human resource environment of business, human resource system- its macro and micro dimensions, strategic management of HR, Strategic HR planning
- Strategic approach to manpower acquisition – recruitment and selection, Strategic development of human resources
- Strategic approach to management structure, job design and work system, strategic management of performance, strategic approach to compensation and benefits
- Strategic approach to Talent management system. Uses data to focus on key measures for evaluation of L&D
- Identifies the appropriateness of relevant social media to enhance branding ,learning effectiveness, Evaluate quality and utility of e-learning alternatives
- Strategic approach to Industrial relations, outsourcing and its HR implications, Mergers and acquisitions and HRM

Textbook and Reference Book

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
1	Strategic Human Resource management,	Das Pulak,	Cengage	1 st
Reference Books				
1	Strategic Human resource management	Charles R. Greer	Pearson	2 nd
2	Strategic HRM	Jaffrey A Mello	Cengage	4th

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62121	Competency Mapping and Building the Talent Pipeline	1.5	0	0.5	2

Introduction

The course will help students understand competency based Human Resource Management. This will equip them with techniques of identifying and defining competencies. This will equip them to validate generic and specific competency models, Designing and developing assessment centre.

Intended Learning Outcomes

- Develop Competency Model
- Conduct competency mapping exercise
- Design Assessment Centre

Course Content

- Definition and types of competency
- Identification of competency
- Documentation related to competency
- Competency requirement of roles at different levels
- Competency modelling
- Behavioural Indicators
- Assessment of competency during hiring and for growth
- Competency based processes (including career and succession planning)
- Measurements related to competency
- Competency based design and reliability validity checks
- Designing competency inventory and aid organization movement

Textbook and Reference Book

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
Reference Books				
1	The Handbook of Competency Mapping: Understanding, Designing and Implementing Competency Models in Organizations	Seema Sanghi	SAGE Publications	3 rd
2	Talent Mapping - Competency Based Workforce Planning	Ganesh Shermon, Anavir Shermon	Lulu.com	1 st

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62122	Managing Employee Engagement	1.5	0	0.5	2

Introduction

To familiarize the students about the relevance and significance of not only attracting but more importantly retaining talented people in organizations with a special focus on career management, benefits administration, managing workforce diversity, and administration. Employee Engagement involves individual and organizational development in response to a changing and complex operating environment. It is not just limited to attracting the best people from the industry but it is a continuous process that involves sourcing, hiring, developing, retaining and promoting them while meeting the organization's requirements simultaneously. This course will equip the participant with the necessary skills and knowledge required for talent recognition, management, retention and development; a sure way to ensure continuity and success.

Intended Learning Outcomes: -

- It will help students to identify types of talent and understand life cycle of Employee Engagement
- Students will identify key Employee Engagement phases for implementing a talent management program.
- Students can state the importance and benefits of talent management.
- Students can compare with replacement planning and traditional processes.
- Identify methods to determine talent for a position.
- Build up questions that help them to recognize talent.
- It will be important for them to use measures to retain talent.

Course Content

- Introduction to Employee Engagement:
- Building Blocks for Employee Engagement:
- Life Cycle of Employee Engagement
- Employee Engagement System
- Approaches to Employee Engagement:
- Employee Engagement and Organizational Environment:
- Talent development budget, contingency plan for talent;
- Talent Acquisition
- Employee Engagement and Retention
- Role of Information Technology in effective Employee Engagement Systems
- Role of Information Technology in effective Employee Engagement Systems
- Role of HR in Employee Engagement:
- Measuring Performance, Assessment and Development Centre:
- Compensation and reward strategies for Effective Employee Engagement:
- Compensation and reward strategies for Effective Employee Engagement:
- Employee Engagement and Corporate Restructuring:
- Contemporary Employee Engagement Issues, Challenges, Best Practices
- Best Practices of Employee Engagement, Employee Engagement in India.

Textbook and Reference Book

Sl No.	Title	Author(s)	Publisher	Edition
Textbook				
1	Talent Management	by Gowri Joshi and Veena Vohra	Cengage.	2019
Reference Books				
1	Managing Talent	Marion Devine	The Economist	2019
2	The Talent Management Handbook, Making Culture a Competitive Advantage by Acquiring, Identifying, Developing, and Promoting the Best People	Dorothy R. Berger, Lance A. Berger	MC Graw hill	2018

Area: Operations Management

CourseCode	Nameof thecourse	Credits			
		L	T	P	Total
OBM60803	Production & Operations Management-I	2	0	0	2

Introduction

Production and operations management (POM) deals with the design and operation of the system producing goods and services. It explores the ways operations managers approach and analyze strategic decisions in operations with a focus on designing products and processes, allocating scarce resources to strategic alternatives, and long-range capacity and facility planning. These operations functions help in achieving the long-range broader organizational objectives.

Subsequent focus will be on medium and short-term planning and control activities. The pedagogy will strive to strike a balance between theoretical and practical perspectives in manufacturing and service organizations.

Intended learning outcomes

- Identify the elements of operations and supply chain management (OSCM).
- Identify the various transformation processes in supply chains of their choice.
- Apply operations management concepts for enhancing competitiveness along the dimensions of cost, quality, flexibility and delivery.
- Prepare for the various career opportunities in operations and supply chain management.
- Know the issues related to the design of products and services with reference to design-for-x (DFX) methodologies governed by design thinking.
- Understand the concept of product lifecycle management (PLM) and supply chain management (SCM) governed by design thinking.
- Analyze projects using network-planning models.
- Evaluate capacity alternatives in supply chains using decision trees.
- Understand, explain and analyze simple manufacturing and service processes.
- Analyze logistics-driven location decisions.
- Analyze common types of manufacturing layouts and illustrate layouts in non-manufacturing setups.
- Demonstrate the application of layout concepts in a digital manufacturing environment.
- Explain how jobs are designed and analyze manufacturing, service and logistics processes to ensure competitiveness of the firm.

Course content

- Operations Management for Competitive Advantage. Operations strategy and Competitiveness, Operations & the Value Chain – Introducing the Supply Chain Framework, Project Management, Product & Service Design – Importance of Design for Environment & Sustainability.
- Process Selection & Supply Chain Design. Forecasting in Operations & Supply Chain Management, Capacity Management– Site Selection & Location Analysis, Processes and Technologies– Process Selection & Design, Facilities Management– Facility Layout, Process Analysis– Job Design & Work Measurement.

Text and reference books

Sl.No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Operations and Supply Chain Management	Chase, Shankar, Jacobs	TMH	15e
Reference Books				
1	Operations Management	Roger G. Schroeder	Irwin McGraw-Hill	
2	Operations Management: Theory & Practice	B. Mahadevan	Pearson Education	
3	Advanced Operations	R. P. Mohanty & S. G.	Pearson	

CourseCode	Nameof thecourse	Credits			
		L	T	P	Total
OBM62804	ProductionandOperationsManagement– II	1.5	0	0.5	2

Introduction

Production and operations management (POM) deals with the design and operation of the system producing goods and services. It explores the ways operations managers approach and analyze strategic decisions in operations with a focus on designing products and processes, allocating scarce resources to strategic alternatives, and long-range capacity and facility planning. These operations functions help in achieving the long-range broader organizational objectives. Subsequent focus will be on medium and short-term planning and control activities. The pedagogy will strive to strike a balance between theoretical and practical perspectives in manufacturing and service organizations.

Intended learning outcomes

- Understand how forecasting is essential to supply chain planning.
- Evaluate demand using quantitative forecasting models.
- Apply qualitative and collaborative techniques to forecast demand.
- Understand sales and operations planning.
- Construct and evaluate aggregate plan that employ different strategies for meeting demand.
- Understand inventory costs and analyze how different inventory control systems work.
- Understand how the material requirement planning (MRP) system is structured.
- Analyze an MRP problem.
- Illustrate how supply chain planning is related to ERP.
- Explain work-center scheduling and apply scheduling techniques to the manufacturing shop floor.
- Analyze employee schedules in the service sector.
- Understand the six sigma approach to improving quality and productivity.
- Illustrate process variations and analyze process quality using statistics.
- Illustrate how lean concepts can be applied to supply chain processes.
- Analyze supply chain processes using value stream mapping.
- Understand and analyze waiting line problems.
- Understand the concepts of synchronous manufacturing & theory of constraints (TOC)

Course content

- Planning and Controlling the Supply Chain (Part-1). Aggregate Sales and Operations Planning, Disaggregation & Master production schedule (MPS)
- Planning and Controlling the Supply Chain (Part-2). Inventory Management, Material requirements planning & Introduction to Enterprise Resource Planning (from MRP to ERP), Operations Scheduling
- Quality Management & Lean Supply Chains. Just-in-Time and Lean Production, Quality Management – SPC & SQC (focus on Six Sigma), Service Process & Waiting Line Management for Service Improvement, Synchronous Manufacturing and Theory of Constraints (TOC)

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Operations and Supply Chain Management — TMH,	Chase, Shankar, Jacobs	TMH	15e
Reference Books				
1	Operations Management	Roger G. Schroeder	Irwin McGraw-Hill	
2	Operations Management: Theory & Practice	B. Mahadevan	Pearson Education	
3	Advanced Operations Management	R. P. Mohanty & S. G. Deshmukh	Pearson	

CourseCode	Nameof thecourse	Credits			
		L	T	P	Total
OBM62808	SupplyChain Management	1.5	0	.5	2

1. Introduction

Supply Chain Management involves the flows of materials and information among all the firms that contribute value to a product, from the source of raw materials to end customers. Elements of supply chain management have been studied and practiced for some time in marketing, logistics, and operations management. This course integrates the different perspectives to develop an appreciation for the challenges in managing a supply chain. The focus is on broad understanding of how to manage a supply chain through use of various analytical tools and conceptual frameworks developed through practice.

Intended learning outcomes

- Identify the supply chain agents at different levels and for various sectors
- Find and evaluate the Supply Chain network design of a company.
- Understand the importance of lean concepts, inventory cost and control through simulation.
- Get the idea to implement the strategies for reducing bullwhip effect across the supply chain.
- Understand the supply chain planning and its relation to ERP.
- Understand and analyze various supply chain elements through project work.

Course content

Introduction;

- Supply Chain Performance;
- Supply Chain Drivers and Obstacles;
- Supply Chain Network Configuration;
- Planning & Managing Inventories in a Supply Chain;
- Managing Uncertainty in the Supply Chain;
- Sourcing Decision in a Supply Chain;
- Transportation: Role, Factors, Modes & Design Options;
- Coordination in the Supply Chain;
- Strategic Partnership and Trust in Supply Chain;
- Information technology & Supply chain.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Managing Supply Chains – A Logistics Approach	John J. Coyle, C. John Langley Jr., Robert A. Novack, Brian J. Gibson	Cengage Learning	Latest Edition
Reference Books				
1	Principles of Supply Chain Management – A Balanced Approach	Joel D. Wisner, G. Keong Leong, Keah-Choon Tan	Cengage Learning	Latest Edition
2	Supply Chain Management – Process, Systems & Practices	N. Chandrasekaran	OUP	Latest Edition
3	Designing & Managing the Supply Chain	David Simchi-Levi, Philip Kaminsky, Eyal Simchi-Levi	McGraw Hill Publications	Latest

CourseCode	Nameof thecourse	Credits			
		L	T	P	Total
OBM62807	TotalQualityManagement	1.5	0	.5	2

Introduction

Total Quality Management (TQM) is not just quality control or quality assurance. Nor is it limited to the boundaries of a Total Quality Control System. It is a dynamic process with a strong philosophical base, which incorporates many of the concepts upon which Total Quality Control Systems are based. The emphasis is on involving everyone in the organization in activities, which provide for continuous never-ending improvements. Quality activities are planned and managed into the system and are oriented towards the achievement of complete customer satisfaction. This course aims to give a broad understanding of the various concepts and techniques used in TQM.

Intended Learning Outcomes

- Develop an increased understanding of the TQM concepts
- Relate the importance of design thinking with the teachings of quality gurus
- Relate TQM with the foundational components of operations management – namely, product development, process design & management and supply chain management
- Relate TQM with product lifecycle management (PLM)
- Recall and relate the quality concepts as applied to projects of their choice
- Use the material learned in new situations
- Recognize quality as a never ending journey

Course Contents

- TQM & Design Thinking- An Overview
- Company Wide Quality Management
- Measurement of Quality (includes COQ; CSF approach)
- Tools for Quality Improvement (includes seven QC tools)
- Problem Solving and Systems Failure Analysis
- Employee Involvement and Empowerment
- Statistical Process Control
- Quality Function Deployment (voice of the customer)
- Taguchi Techniques
- KAIZEN: Concepts
- Quality Assurance Systems: A basic understanding.
- Total productive maintenance (TPM)

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
Reference Books				
1	Quality Planning and Analysis	Juran & Gryna	Juran & Gryna	Recent
2	Taguchi Techniques for Quality Engineering	P.J. Ross	McGraw Hill	Recent
4	Introduction to Quality Control	Kaoru Ishikawa	3A Corporation	
5	Total Quality Control	A.V. Feigenbaum	McGraw Hill	Recent
6	Quality Measuring and Monitoring	T. Bendell, J. Kelly, T. Merry and F. Sims.		

CourseCode	Nameof thecourse	Credits			
		L	T	P	Total
OBM62815	Managing Service Operations	1.5	0	.5	2

Introduction

This course explores the dimensions of successful service firms. It prepares students for roles in managing service operations and suggests creative entrepreneurial opportunities. Through case studies from a variety of industries (retail, banking, medical devices, hi-tech), and the sharing of professional experiences, students gain practical insights that can be readily applied in the workplace. In the first part of the course, we discuss service model, the customer and management systems. Later on the concepts of service journey, capacity, and demand management is discussed with emphasis on real-life applications. Also the course covers design thinking, specifically the service design toolset, including human-centred approaches such as blueprinting, customer journeys.

The course material will integrate operations, marketing, strategy, information technology and organizational issues.

Intended learning outcomes

- Understand the unique challenges in managing excellent service operations.
- Gain exposure to and mastery of analytical tools specific to service industries.
- Understand Service design methods and management processes
- Develop the ability to achieve competitive advantage in services
- Design and develop a new service using concepts taught in class.
- Make presentations in front of an audience

Contents

- Module 1: Understanding Service Operations and Strategy, Distinctive characteristics of service Operations, Competitive service strategies and triple bottom line
- Module 2: New Service Development, Service design elements, service blueprinting, Service benchmark, Creating customer service orientation, Managing Services in B2B context
- Module 3: Design thinking for Service Design, Design Thinking Workshop for service design
- Module 4: Service Quality, SERVQUAL, Quality service by design, Cost of Quality, Quality tools for analysis and problem solving
- Module 5: Service Facility Location, Facility Location techniques, Supporting Facility and Process Flows
- Module 6: Managing Service Capacity and demand, Forecasting demand for services, Analytical queuing models, Yield Management

Textbook

Title	Author(s)	Publisher	Edition
Service management: Operations, strategy, information technology	Fitzsimmons, James A	McGraw Hill	8 th Edition

Reference books

Title	Author(s)	Publisher	Edition
Services: Marketing, Operations, and Management:	Jauhari Vinnie, Kirti Dutta	Oxfords India	1 st Edition
Service operations management: Improving service delivery	Johnston, Robert & Clark Graham	Pearson	4 th Edition

CourseCode	Nameof thecourse	Credits			
		L	T	P	Total
OBM62809	ProjectManagement	1.5	0	.5	2

Introduction

This course guides students through the fundamental project management tools and behavioral skills necessary to successfully launch, lead, and realize benefits from projects in profit and non-profit organizations. Students explore project management with a practical, hands-on approach through case studies and class exercises. Students are exposed to the various development stages of a project, such as, project initiation, project planning and design, project execution or production, project monitoring and controlling, and project completion. There will be a brief exposure to some modern approaches to project management, such as, critical chain project management (CCPM) based on the theory of constraints (TOC), agile project management. Students will understand the importance of Project Management across all avenues of work, from producing a Hollywood movie to constructing a skyscraper to upgrading IT systems. They will understand that PM skills are critical to most careers and that they can be applied at most businesses and professions.

Intended learning outcomes

- Understand project management knowledge areas and process groups
- Employ work breakdown structures (WBS) in a project application.
- Demonstrate the use of appropriate network scheduling techniques.
- Identify and use key performance metrics for project success
- Understand how to manage project cost, quality, and delivery
- Produce a project proposal and discuss the implementation of a proposed plan

Contents

- Module 1: Introduction to Project Management, Project Lifecycle, Project Selection and Portfolio Management, MRD, PRD, QFD
- Module 2: Project Planning, Project Scope Document, Work Breakdown Structure
- Module 3: Project Scheduling, Network scheduling (precedence diagramming), PERT, CPM, Resource allocation, Project Crashing, Theory of Constraints (ToC), Critical Chain Project Management
- Module 4: Project Management tool/software demonstration, Demonstration of various project management software (Trello, Asana, Wrikeetc)
- Module 5: Project Cost Management, Cost Estimating techniques, Project Budgeting
- Module 6: Project Quality Management, Quality Planning, Quality Assurance, Quality Control
- Module 7: Project Risk Management, Risk breakdown Structure and Risk Management Plan, Risk Register, Qualitative and Quantitative Risk Analysis
- Module 8: Project Control and Monitoring, Earned Value Management
- Module 9: Modern approaches to project management, Agile methods, Lean Project Management

Textbook

Title	Author(s)	Publisher	Edition
Project Management for Engineering, Business and Technology	Nicholas, John M. & Steyn, Herman	Routledge	5 th Edition

2. Reference books

Title	Author(s)	Publisher	Edition
Agile Project Management For Dummies	Mark C. Layton, Steven J. Ostermiller	For Dummies	2 nd Edition
Projects: Planning, Analysis, Selection, Financing, Implementation and Review	Prasanna Chandra	Tata McGraw Hill	9 th Edition
A guide to the Project Management Body of Knowledge	Project Management Institute	Project Management Institute	6 th Edition

Area: Information Technology Management

Cours Code	Name of the course	Credits			
		L	T	P	Total
OBM60601	Information Technology for Managers	2	0	0	2

Introduction

The course is supposed to cover five primary aspects, such as, Basics of computer hardware, software and number systems; Basics of Data storage and communication technologies; Business use of Information Technology: Primarily TPS, MIS and DSS; Emerging Technologies; and IT Privacy and Security

Intended learning outcomes

- Convert numbers between various number systems and perform basic arithmetic operations
- Explain the key parts of a computer and how they work together
- Explain the key concepts of data transmission
- Articulate the difference between various IT systems such as MIS, DSS and TPS and explain the basics of Enterprise Systems
- Show a clear understanding of Internet of Things (IoT) and Cloud Computing, and how they are transforming business applications
- Understand the basics of IT Security and Privacy issues including attacks and frauds and their mitigation.

Course Content

- **Number Systems:** Numbers systems conversions, binary and hexadecimal numbers, Basic arithmetic operations
- **Computing Environment and Data Storage:** History of computing, early computers, vacuum tubes, various computer generations, Parts of computer and memory including CPU, bus, peripherals, Basics of digital data storage, various primary and secondary memories, Role of operating systems, Various generations and types of computer software
- **Data Transmission:** Basics of digital transmission, networking technologies and physical transmission media, LAN, WAN and Internet Network topologies, and devices
- **Business use of IT:** Types of IT systems: TPS, MIS and DSS, and key features of each, Overview of Enterprise Systems such as ERP, CRM and SCM
- **New and Emerging Technologies:** Basics of Internet of things, wireless transmission technologies, and architecture, Opportunities and challenges in implementation, Cloud computing overview, and types of cloud services such as IaaS, PaaS and SaaS
- **IT Privacy and Security:** Information security challenges including viruses and worms, Trojans, hacking, denial of service, frauds, attacks, social engineering and phishing, Mitigations such as Firewall, Antivirus, VPN, Proxy and InfoSec policies, Evolving threats and opportunities

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Information Technology for Management	Behl, Ramesh	McGraw Hill	Latest
Reference Books				
1	Computer Fundamentals	Anita Goel	Pearson Education India	Latest
2	Management Information Systems	O'Brien, Marakas and Behl	McGraw Hill	Latest
3	Cloud Computing: A Practical Approach	Velte, Velte and Elsenpeter	McGraw Hill	Latest
4	MS Access: Plain and Simple	Frye, Curtis	Microsoft Press	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62611	IT Project Management	1.5	0	.5	2

Introduction

ITPM provides an overview of the roles, responsibilities, and management methods of the technology project manager. The course assumes no prior knowledge in management techniques and is intended to teach students how to develop approaches and styles of management for software projects and IT infrastructure projects. The course assumes a basic understanding of analysis techniques.

1. Intended learning outcomes

The objective of this course is to demonstrate how IT PROJECTS are developed and are managed effectively in digital firms and software research and development organizations. Students taking this course will have better capability in managing various processes of IT infrastructure Project management skills including PMP certification in future.

Course content

- Introduction to PM, SPM, ITPM
- Project Management and IT Context
- Project Management Process Groups
- Project Integration Management
- Project Scope Management
- Project Time Management
- Project Cost Management
- Project Quality Management
- Human Resource Management in Projects
- Communication Management
- Project Risk Management
- Procurement Management

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
4. Text Book				
1	Information Technology Project Management	Kathy Schwalbe	Cengage Publications	Recent

5. Reference Books				
1	Software Project Management	Hughes and Cotterell	Tata McGraw Hill	Recent

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62814	Machine Learning and Artificial Intelligence	1.5	0	.5	2

Introduction

The objective of this course is to help students understand the concepts, methods and application of machine learning and AI in a ever changing business environment. Students will learn supervised learning applications using decision tree, Random forest and artificial neural networks. Subsequently, they will learn unsupervised learning techniques like clustering, dimensionality reduction and deep learning.

Intended learning outcomes

- Develop an interest among students to learn from data and understand various learning algorithms
- To familiarize students on application of Python in machine learning
- Differentiate and relate unsupervised, supervised and deep learning techniques
- Understand, formulate and interpret various machine learning problems to real world business applications
- Understand the use of AI in business decision making process

Course content

- **Introduction to Machine Learning:** Basic concepts of AI, machine learning and deep learning, Categories of machine learning algorithms, Justification of machine learning applications in real world business problems, Understanding the framework of machine learning model, Justification of using Python as a language of machine learning using open source package like Anaconda and google colab as a free jupyter notebook environment. Understanding bias and variance trade off.
- **Descriptive Analytics using Python:** Understanding descriptive analytics, loading of dataset to perform exploratory data analysis, dataset filtering, grouping, joining, ordering, slicing, indexing, cross tabulation, missing data analysis, preparation of various plots and **comparing distributions using python.**
- **Simple and Multiple Linear Regression Models** □ Understanding concept of simple and multiple linear regression in predictive analytics, regression model diagnostics (Residual vs fitted Plot, Normal Q-Q plot, Scale Location Plot, Residuals vs Leverage Plot), understanding splitting of dataset into training and test datasets, accuracy measures like R square, adjusted R square, RMSE and model summary using python.
- **Classification Models :** Introduction to binary logistic regression, odd ratio, logistics function, logit, model building, understanding model summaries, accuracy measurement, interpreting confusion matrix and ROC Curve, **treatment of categorical features**, Application of Multinomial logistic regression using python, building decision tree using entropy and Gini criteria, accuracy measurement, over fitting, pruning and introduction to ensemble learning like bagging (ex: Random Forest) and **boosting (AdaBoost).**
- **Clustering:** Importance of clustering as an unsupervised learning algorithms, understanding clustering techniques, application and interpretation of k means clustering using Python datasets, features normalization, Interpretation of clusters. Application of PAM algorithm and Hierarchical clustering in Python using various datasets.
- **Association Rule Mining Applications:** Introduction to Associate Rule Mining/Market Basket analysis, understanding concept of measures like support, confidence and lift, loading datasets to apply a priori algorithm, interpreting interesting association rules. **Introduction to ECLAT algorithm and FP Growth algorithm to deal with huge datasets using Python.**
- **Introduction to Neural Network and Deep Learning:** Understanding neural networks, perceptron algorithm for binary classifiers using Python, elementary introduction to ANN, CNN and RNN. Basic understanding of Restricted Boltzmann Machine and Auto encoders.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Machine Learning using Python	Manoranjan Pradhan and U Dinesh Kumar	Wiley	Recent

Reference Books				
1	Artificial Intelligence and Machine Learning for Business: A No-Nonsense Guide to Data Driven Technologies	Steven Finlay	Atlantic Publishers and Distributors	Recent
2	Machine Learning	Tom M. Mitchell	Tata McGraw-Hill	Recent
3	Understanding Machine Learning: From Theory To Algorithms	Shai Shalev-Shwartz	JBC Publisher and Distributor	Recent
4	Artificial Intelligence 3e: A Modern Approach	Russels	Pearson	Recent
5	R Deep Learning Cookbook	Dr. PK S Prakash and Achyutuni Sri Krishna Rao	Atlantic Publishers and Distributors	Recent
6	Artificial Intelligence and	Chandra SSV	PHI	Recent

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62610	E-Business	1.5	0	.5	2

Introduction

Information Technology is profoundly changing how business is conducted. It has not only brought revolutionary changes in the business processes, but also spawned completely new and innovative business models that couldn't be imagined without the use of IT. E-commerce, the most visible aspect of E-business, has completely changed the face of retail, at least in the larger cities, and has been making fast inroads into rural areas, riding on the wave of low-cost, high-speed internet and online payment channels. Given the speed of business in the global competitive climate, an organization's strategy is only as good as its pace of implementation. This is where understanding the capabilities of IT and knowing how to use it optimally for competitive advantage is crucial for students of management.

Intended learning outcomes

- Appreciate the global interconnected world of business and how internet and web is shaping them
- Link an organization's strategy to likely technology initiatives/ imperatives
- Demonstrate clear understanding of the evolution of web, with a basic knowledge of various tools and technologies that have made the web evolve
- Describe a standard web-infrastructure including hosting mechanism and the 2-tier, 3-tier models
- Understand the entire E-business / E-commerce value chain including the role played by

all the stakeholders in the online world.

- Enumerate the various commercial and business models of businesses and how it dictates their IT initiatives
- Explain the various generic strategies and how they affect the investment in IT or dictate the IT strategy of the organization.
- Enlist and explain the various digital marketing channels and under what conditions they are used by an organization
- Show clear appreciation of the key challenges in Marketing, Supply Chain Management, Procurement and CRM, and be able to explain how IT is used to mitigate those and create differentiation in all of the above areas.
- Explain the basic mechanism behind electronic payments and how it has affected businesses and created new models.
- Understand the basic concepts of change management and show an appreciation for how IT upsets the organization's processes and what needs to be taken care of for a smoother implementation
- Appreciate the various IT security risks to an E-business establishment and what generic steps need to be taken to mitigate the risks.

Course Content

- **Introduction:** Context setting: Globalization and Information Economy, Data driven business, E-business and E-commerce basics
- **Technological Background.** Web evolution, Web technologies, Content Management Systems for Web-content hosting and E-commerce applications, Typical E-commerce architecture, 2 and 3-tier models, Use of Application Programming Interfaces (API), E-business Infrastructure components
- **E-business Models.** E-business maturity model, intermediation and disintermediation, Revenue and Commercial Models, Online presence and value proposition, Intermediaries
- **E-business Strategy.** Generic Organization Strategies, IT as a driver of strategy: How does it get impacted? Investment, development, outsourcing decisions
- **Supply Chain Management and Procurement Systems.** SCM and Procurement Processes and Models, Value Chain Analysis of IT-enabled SCM processes, IT-enabled SCM strategy, Key adoption barriers and the role of IT
- **Technology-driven Marketing.** Online Promotion and Branding: Channels and Models, E-marketing strategies including Campaign Management, Tools and Technology platforms for E-marketing, Integration of Social Media
- **CRM Systems.** Customer Acquisition and Retention Management using integrated IT services, Strategy for social and crowd-sourced CRM
- **Online Payments and Security.** Online Payment Infrastructure and processes, Securing E-commerce transactions, Risks, frauds and attacks: Detection and prevention

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
4. Text Book				
1	E-business and E-commerce Management Strategy, Implementation and Practice	Dave Chaffey	Pearson	5th Edition

5. Reference Books				
1	Click!: The Amazing Story of India's E-commerce Boom and Where it's Headed	Jagmohan Bhanver, Komal Bhanver	Hachette	28 March 2017
2	The Everything Store: Jeff Bezos and the Age of Amazon	<u>Brad Stone</u>	Corgi	31 Jul 2014
3	Alibaba's World: How a Remarkable Chinese Company is Changing the face of Global Business	<u>Porter Erisman</u>	Pan Macmillan India	14 May 2015

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62612	Internet of Things	1.5	0	.5	2

Introduction

The purpose of this course is to impart knowledge on Internet of Things (IoT), which relates to the study of sensors, actuators, and controllers, among other things, IoT applications and examples overview (building automation, transportation, healthcare, industry, etc.) with a focus on wearable electronics. This course will impart knowledge on IoT challenges, security aspects.

Intended learning outcomes

Student should learn and can able to understand the applications of Internet of things in different sectors including all modern equipment to living beings and used in day today life. This course will lead them to understand how easily Operational Technology (OT) can communicate with Information Technology (IT) which is going to be future of Technology convergence.

Course content

- **Introduction.** The Internet of Things, Importance of IOT, Towards the IOT Universe IOT Strategic Research and Innovation Directions, IOT Applications, Future Internet Technologies, Infrastructure, Networks and Communication, Processes, Data Management, Security, Privacy & Trust, Device Level Energy Issues, IOT Related Standardization, Typical IOT Application, Trends & Implications
- **IOT Architecture.** Introduction, State of the art, Architecture Reference Model- Introduction, Reference Model and architecture, IOT reference Model, IOT Reference Architecture- Introduction, Functional View, Information View, Deployment and Operational View, Other Relevant architectural views.
- **IOT Applications.** Introduction, IOT applications for industry: Future Factory Concepts, Brownfield IOT, Smart Objects, Smart Applications, Four Aspects in your Business to Master IOT, Value Creation from Big Data and Serialization, IOT for Retailing Industry, IOT For Oil and Gas Industry, Opinions on IOT Application and Value for Industry, Home Management, eHealth.
- **Internet of Things Privacy, Security and Governance.** Introduction, Overview of Governance, Privacy and Security Issues, Contribution from FP7 Projects, Security, Privacy and Trust in IOT-Data-Platforms for Smart Cities, First Steps Towards a Secure Platform, Smartie Approach. Data Aggregation for the IOT in Smart Cities, Security.
- **Internet of Things Strategic Research & Innovation Agenda.** Internet of things of vision, IOT Strategic Research & Innovation Direction: IOT Application & Use case Scenario, IOT Functional View, Application Area,
- **IOT Smart X Application:** Smart Cities, Smart Energy & Smart Grid, Smart Mobility & transport, Smart Home, Smart Building & Infrastructure, Smart Factory & Manufacturing, Smart Health, Smart Logistics & Retail

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Internet of Things Applications- From Research and Innovation to Market Deployment	Ovidiu Vermesan & Peter Friess	River Publishers	Recent
Reference Books				
1	Internet of Things: Converging Technologies for Smart Environments and Integrated Ecosystems	Dr. Ovidiu Vermesan and Dr. Peter Friess	River Publishers	Recent

2	Internet of Things (A Hands-on-Approach)	Vijay Madiseti and Arshdeep Bahga	USBPD	Recent
3	6LoWPAN: The Wireless Embedded Internet	Zach Shelby and Carsten Bormann	Wiley	Recent
4	Interconnecting Smart Objects with IP: The Next Internet	Jean-Philippe Vasseur, Adam Dunkels and Morgan Kuffmann	First Media 2	Recent

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62607	Enterprise Resource Planning Systems	1.5	0	.5	2

Introduction

Enterprise resource planning systems (ERPS) is the integrated management of core business processes, often in real-time and mediated by software and technology. ERP provides an integrated and continuously updated view of core business processes using common databases maintained by a centralized database management system. The applications that make up the system share data across various departments (manufacturing, purchasing, sales, accounting, etc.) that provide the data. ERP facilitates information flow between all business functions and manages connections to outside stakeholders.

Intended learning outcomes

To make students understand and realize how an ERP (SAP) system is implemented through various stages in an organization. The sessions will be conducted with the help of class room lectures, SAP Lab classes, team exercises and presentations in workshop mode. Most of these sessions will have hands-on lab activities in SAPECC 6.0 environment.

Course content

- ERP – Overview and general processes and architecture
- ERP – Implementation strategy and phases overview
- ERP – Implementation methodology
- ERP-SAPOverview and navigation through SAPECC 6.0
- SAP Data-Organization data, Master Data and Transaction Data
- SAP-Material Management and Quality Assurance
- SAP-Plant Management
- SAP-Sales and Distribution, Billing, Shipping and Logistics
- SAP Lab-MM, SD, HR and FICO
- AS-IS and TO-BE, realization (Dev client and Test client)
- Preparation for GO-Live
- GoLive
- PostGoLive support.

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
4. Text Book				
No text book is prescribed. SAP resources from SAP University Alliance will be provided				
5. Reference Books				

1	Implementing SAP ERP Sales & Distribution	Williams, Glynn	Mcgraw-Hill	Latest
2	SAP Materials Management	Shukla, Mukesh	Mcgraw-Hill	Latest
3	Enterprise Resource Planning	Monk, Ellen F. Wagner, Bret J.	Cengage Learning	Latest
4	ERP Demystified	Leon, Alexis	McGraw-Hill	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62601	Data Mining and Business Intelligence*	1.5	0	.5	2

1. Introduction

The objectives of this course are to impart knowledge about the emerging trends of Data Mining and Business Intelligence and to help students understand and appreciate the importance of making meaningful use of large volume of data for the purpose of decision-making in the complex and ever changing business environment. The students will be exposed to real life business applications as BI student projects.

Intended learning outcomes

- Differentiate decisional systems from operational systems
- Understand and apply data mining tools and techniques
- Understand the role of BI systems in supporting decision making in Business World
- Visualize and able to prepare multi dimensional models and Dashboards
- Understand best practices and Trends of Business Intelligence

Course content

- **Introduction to Data warehouse :** Introduction to Data Warehouse, Operational vis-a-vis decisional Systems, Necessity and commercial importance of a Data Warehouse , Enterprise Data warehouse and Data Mart, 2 tier and 3 tier Architecture, ETL Process, Multi-dimensional modeling : Multi-dimensional representation of data, Normalization vis-a-vis Dimensional Modeling, Star Schema , Snow Flake Schema and Fact Constellation.
- **Introduction to Data Mining:** Evolution of Data Mining, applications in business , concepts, overall functionalities and challenges, KDD vis-a-vis Data Mining, DBMS vis-a-vis Data Mining
- **Frequent Pattern Mining:** Association rule mining introduction, Concept of support, confidence and lift with an example, Sense of rule quantity, rule quality and importance of FIM Algorithm. Application of A Priori algorithm as FIM algorithm to find out interesting rules using R. Application with large dataset using ECLAT and FP Growth algorithm using R.
- **Classification Techniques and its Applications :** overview , Hold out and Cross validation approaches, concept of confusion matrix , issues of pre processing like data cleaning, data transformation and feature selection, Bias variance trade off , approaches to missing data analysis and combining classifiers for better model performance (Bagging and Boosting), Concept, decision tree construction, Information gain, Entropy and gini value significance for ID3.
- **Clustering Techniques:** Introduction, distance function, applications, measurement of similarity , concept of squared error and absolute error criterion , Explanation of K means Clustering with an example of R dataset, Understanding PAM Algorithm with example with R dataset. Application of DBSCAN and BIRCH Algorithm using very large Datasets using R
- **Introduction to BI, Query and Reporting:** Understanding Business Intelligence technology. Market for business Intelligence: Operational and tactical business Intelligence and driving forces of BI Market, Component of Business Intelligence Architecture, Business Query and Reporting, concepts of 3 dimensional reporting using data cubes, Slicing, dicing and pivoting, Multidimensional BI Reporting.
- **Power BI Applications :** Introduction, understanding architecture of power BI, Comparison with Tableau, Data transformation with power BI Desktop, Introduction to Power BI Data Modeling, Data visualization with Power BI Desktop, sharing and Working with DAX,

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Data Mining	Pudi, Vikram Radhakrishna, P.	Oxford Publishing Press	Latest
Reference Books				
1	Decision Support And Business Intelligence Systems	Efraim, Turban (etal)	Pearson	Latest
2	Business Intelligence: Data Mining And Optimization For Decision Making	Vercellis, Carlo	John Wiley	Latest
3	Data Mining For Business Intelligence: Concepts, Techniques And Applications In Microsoft Office Excel With XL Miner	Galit, Shmueli (etal)	Wiley India	Latest
4	Data Mining Explained: A Manager's Guide To Customer-Centric Business Intelligence	Delmater, Rhonda Hancock, M	Digital Press	Latest
5	Business Intelligence In The Digital Economy: Opportunities, Limitations And Risks	Raisinghani, Mahesh	IGI Press	Latest
6	Making Better Business Intelligence Decisions Faster	Vitt, Elizabeth Luckevic, Michael Misner, Stacia	Microsoft Press	Latest

Area: Business Analytics

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60503	Quantitative Techniques-I	2	0	0	2

2. Introduction

Businesses are now increasingly using statistical techniques to convert data into information, which helps in appropriate decision making. This paper, in Decision Sciences area, prepares the students understanding and appreciating the essential concepts and applications, with focus on relevant tools and techniques.

Intended learning outcomes

To help management students appreciate the relevance and importance of the use of quantified/statistical facts, in the process of decision-making in the ever-changing business environment. To discuss and apply basic statistical tools and techniques, which are useful in every area of business.

Course content

- Role of Statistical Data, Summary & Descriptive Statistics
- Measures of Central Tendency
- Measures of Dispersion, Coeff. of variation
- Probability & Probability Distributions
- Discrete Probability distributions: Binomial & Poisson distributions
- Continuous Probability Distribution: Normal Distribution, Using Standard Normal Probability Distribution table
- Sampling Concepts (What, why and how sampling made; Prob & non-prob. Sampling)
- Estimation:
- Introduction, Point Estimates, Interval Estimates, Confidence Intervals (applications & concepts only);
- Testing Hypotheses:
- One-Sample Tests
- Two-Sample Tests
- Chi-Square as a Test for independence
- Analysis of Variance (ANOVA)

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Statistics for Management	Levin, Rubin et al	Pearson	2017 or Latest
Reference Books				
1	Quantitative Methods for Bus	Anderson, Sweeny et al	Cengage	Latest
2	Intro. Mgmt Science	Anderson, Sweeny et al	Cengage	Latest
3	Managerial Statistics	Gerald Keller	Cengage	9th Ed. 2012/ latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60504	Quantitative Techniques–II	2	0	0	2

Introduction

Businesses are now increasingly using statistical techniques to convert data into information, which helps in appropriate decision making. This paper, in Decision Sciences area, prepares the students understanding and appreciating the essential concepts and applications, with focus on relevant tools and techniques.

Intended learning outcomes

To help management students appreciate the relevance and importance of the use of quantified/statistical facts, in the process of decision-making in the ever-changing business environment. To discuss and apply basic statistical tools and techniques, which are useful in every area of business.

Course content

- Bi-Variate Study (Correlation & Regression)
 - Simple Regression Analysis
 - Inferences about Regression as a whole (using F test)
 - Multi-collinearity in Multiple Regression
 - Estimation using the Regression Line using Method of Least Squares; Standard Error of Estimate & its interpretation
 - Correlation Analysis: Multiple Regression, Coefficient of Determination,
 - Concept & applications of Multiple Regression (limited to interpretation of output/result only; rigorous calculation to be excluded); computer (software, like SPSS) output analysis
- Nonparametric Tests; (Sign Test, Run Test, Rank-sum U test)
- Introduction to Operations Research (OR):
- Formulation of Problems (LPP); Solving LPP problems by Graphical Method & problems using Excel Solver.
- Simplex method (maximization LPP solutions)

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Statistics for Management	Levin, Rubin et al	Pearson	2017 or Latest
Reference Books				
1	Quantitative Methods for Bus	Anderson, Sweeney et al	Cengage	Latest
2	Intro. Mgmt Science	Anderson, Sweeney et al	Cengage	Latest
3	Intro. Mgmt Science.	Hillier & Hillier	Tata McGraw	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60502	Business Research Methods	2	0	0	2

Introduction

The course is intended to help the management students appreciate and use the basic tools and techniques of Business Research, in decision making. Emphasis will be given on conceptual understanding of the basic, useful tools and techniques and its meaningful applications.

Intended learning outcomes

- Understand the meaning and concept of Business research and how it is different from different pure science research
- Apply the concepts of measurement in practical research projects through Questionnaire design and attitude management
- Analyse and apply sampling techniques in field research works
- Use Qualitative Research techniques in research work
- Transform data into information, and calculate and interpret basic descriptive statistics.
- Apply and interpret different types of quantitative methods of analysis.
- Effectively communicate research in a written report and presentation

Contents

- Module 1 (Introduction to BRM): What is Research Methodology- Different types of research: problem solving research, Applied and basic research, Scientific research, Research and the Scientific Method, Business Research, Good Research, Scientific Method in Good Research.
- Module 2 (Measurement Concepts): Measurement and scaling concepts; Levels of scale measurement. Attitude Measurement- Attitude as hypothetical construct, Attitude rating scales, Measuring Behavioural intention, Ranking, Other methods of attitude measurement, Selecting a measurement scale. Questionnaire Design- Questionnaire quality and design, Guidelines for constructing questions, Interactive and adaptive questions Layout and sequence of the questions, Administering the questionnaire.
- Module 3 (Sampling and Fieldwork): Sampling designs and sampling procedures- Reason for sampling, Sampling concepts, Sampling error, Types of sampling, Concepts of accuracy and Diversity in sampling. Determination of sample size- A review of Statistical Theory: The normal distribution, Population distribution, sample distribution and sampling distribution Central limit theorem, Sample size. Fieldwork- Nature of fieldwork, Good interviewing techniques and fieldwork management
- Module 4: (Qualitative Research): Focus Group Discussion, In Depth Interview techniques, Projective Techniques, Ethnography, New trends in Qualitative Research.
- Module 5: (Working with Data): Editing and coding data, Descriptive statistics
- Module 6: (Quantitative Statistical Analysis with SPSS and MS Excel), Hypothesis testing (one-tailed test, two-tailed test), t-test and Z-test, Cross-tabulation, ANOVA, Correlation and Regression.
- Module 7: (Writing a Research Report), Structure of research report, Presentation of report

6. Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
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Text Book				
1	Business Research Methods	Zikmund, Carr, Griffin	Cengage	8e
Reference Books				
1	Marketing Research	Malhotra, Naresh K. & Dash, Satyabhusan	Pearson	-
2	Business Research Method	Cooper & Schindler	Mc Graw Hill	-
3	Essentials of Marketing Research	W Zikmund	Cengage	-

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM60829	Business Analytics	2	0	0	2

1. Introduction:

Recently corporates from diversified sectors have been active in using data. The motivation for using data comes from a significant reduction in cost in storing and fetching data. Companies can generate and store huge volume of data through ERP implementation, Internet of things, social media and different audio/video encodings. The challenge is to browse through the huge volume of data and to create stories out of them, which would further be useful for increasing top-

line of companies or mitigating risk. How much information can be extracted from a set of data is the major objective or challenge.

To assist corporates in taking data-driven decisions, it needs a knowledge base to explore and visualize data, to be able to create dashboards and make stories, and most importantly to present the technicalities in the embedded data to a non-technical audience. This course introduces to the various facets of data and its distributions. It opens the student to the applications of discrete mathematics, probability, and statistics in the area of data science. It introduces various plots to visualize and interpret data, which are the crux of decision science. Further, it adds to the area of predictive analysis using basic models which could be stepping stones for further learnings and applications in analytics. The course will also introduce to the programming language R which is available as an open source.

Intended Learning outcome:

- Know the importance of big data in management and its properties
- Develop awareness to make business communication through data-driven information
- Should be able to explain natural processes by relating them to a certain distribution of data
- Able to understand and create statistical charts and tables for further use in dashboards
- Get exposure and have hands on experience in using the globally used statistical software-R
- Can explain the differences between descriptive and predictive analytics with use case scenarios

Course Contents:

- Introduction, Role of Data in Organization
- Data lifecycle. (Data source, data changes, processes, usage)
- Data representation forms (linear, exponential, logarithmic)
- Various data types (numeric, categorical)
- Discrete mathematics
- Understanding distributions in Data
- Fundamentals of probability (Basic Idea, expectation, probability calculus, conditional probability)
- Probability distribution function (uniform, normal, binomial, chi-square, student's t distribution)
- Central limit theorem, central tendency of data concepts
- Data visualization concepts; (scatter plot, pie chart, histogram, bar chart, boxplot, density plot, area plot etc)
- Data visualization using R/ Excel
- Concepts of data cleaning; importance in analytics
- Time series Data and Regression Models
- Forecasting Technique
- Introduction to predictive analytics
- Supervised vs. unsupervised learning (concepts only)

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
4. Text Book				
Course material will be provided including online contents as and when the class continues.				
5. Reference Books				
1	Business Analytics: Data Analysis and Decision making	S Christian Albright & Wayne L. Winston	Cengage	5th
2	Storytelling with Data: A Data Visualization Guide for Business Professionals	Cole Nussbaumer Knaflic	John Wiley & Sons	Latest
3	Business Analytics	James E Evans	Pearson	3rd
4	Data Science & Big Data Analytics, Discovering, visualizing and presenting	David Dietrich, Barry Heller, & Beibei Yang	Wiley	Latest
5	R for Everyone, Advanced Analytics and Graphics	Jared P. Lander	Addison Wesley	1st
6	R for Data Science, Import, Tidy, Transform, Visualize, and Communicate with Data	Hadley Wickham & Garrett Grolemund	O'REILLY	1st
7	Ggplot2, Elegant graphics for data analysis	Hadley Wickham	Springer	Latest
8	Let Us Python	Yashavant Kanetkar	BPB Publication	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62837	Data Analytics using R	1.5	0	0.5	2

1. Introduction

With increase in computing power and data storage capacity, present day businesses are gearing up to access its benefit. Companies are able to generate and store huge volume of data through ERP implementation, Internet of things, and audio/video encode technologies. Every minute details related to customer engagement with businesses are tracked and are stored in machines. How much information can be extracted from a set of data is the challenge. Business Analytics use the power of probability and advanced statistical concept to analyse data more intelligently. This includes quantitative, statistics, and predictive modelling for generating/finding data-driven insights which take the decision-making process in businesses one step further. Thus the results from the analytics may be used for developing competitive strategies for a business scenario. This can be used in the field of finance, marketing, operations, and HR for identifying ROI drivers, developing target market for a product, fine-tuning the supply chain, churn management etc. The course will target to achieve introductory knowledge on Analytics to enhance the decision-making process from diverse field of applications. The course will also introduce the programming language R which is available as an open source.

Intended Learning Outcomes

- Generate confidence in dealing with data
- Able to perform data visualization using R ggplot2 package
- Learn to handle missing data using MICE algorithm
- Use R software to run machine learning models

Course Contents

- Introduction, Role of Business analytics in Organization
- Analytics project life cycle and stages
- Business Statistics (Descriptive and Inferential)
- Data distribution; probability density functions
- Introduction to predictive analytics
- Working with Data – Introduction to R
- Data Visualization – Using R
- Data Wrangling
- Data imputation
- Linear Regression & Prediction modelling – (Theory and modelling using R)
- Logistic Regression & Prediction modelling – (experience with using R)
- Supervised vs. unsupervised learning
- Data segmentation and classification technique- Decision science – Trees & clustering
- Business Analytics – Case studies using R

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
No textbook is prescribed. Course handout will be provided				
Reference Books				
1	R in Action, Data Analysis and Graphics with R	Robert I. Kabacoff	Manning	2nd
2	Data Mining and Business Analytics with R	Johannes Ledolter	Wiley	Latest
3	R for Everyone, Advanced Analytics and Graphics	Jared P. Lander	Addison Wesley	1st
4	R for Data Science, Import, Tidy, Transform, Visualize, and Communicate with Data	Hadley Wickham & Garrett Grolemund	O'REILLY	1st
5	Ggplot2, Elegant graphics for data analysis	Hadley Wickham	Springer	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62830	Advanced Business Analytics	1.5	0	0.5	2

Introduction

Business Analytics uses the power of probability and advanced statistical concepts to analyse data more intelligently. This includes quantitative statistics, and predictive modelling for generating/finding data-driven insights which take the decision-making process in businesses one step further. Thus the results from the analytics may be used for developing competitive strategies for a business scenario. This can be used in the field of finance, marketing, operations, and HR for identifying ROI drivers, developing target market for a product, fine-tuning the supply chain, churn management etc. The course will target to achieve introductory knowledge on Analytics to enhance the decision-making process from diverse fields of applications. The course will also introduce the programming language

language which is available as an open source. Intended learning outcomes

Intended Learning Outcomes

- Able to wrangle data and perform data imputation
- Perform data visualization with confidence
- Able to generate tidy data format using <tidyverse> package of R
- Understand the predictive analytics of Logistic regression
- Apply Logistic Regression concept to find out customer churn, marketing spends with data backed insights
- Use and understand the concepts of decision tree to understand machine learning

Course Contents:

- Introduction, Role of Business analytics in Organization
- Data Visualization (Using R)
- Advanced descriptive analytics, more use of ggplots library and interpretations
- Data cleaning operations, Data preparations for analytics (use dplyr, tidyverse and stringr library for slicing and dicing data)
- Missing data types and operations (Multivariate Imputation by Chained Equations in R)
- Predictive analytics fundamentals
- Analysing the residuals (OLS regression)
- Linear Regression (Multiple regression) & Prediction modelling – (R & other software)
- Categorical data analysis
- Logistic Regression & Prediction modelling (parameters estimation) – (experience with using R and other software)
- Logistic model diagnostics, classification table, optimal cut off probability
- Supervised vs. unsupervised learning - Introduction to machine learning
- Data segmentation and classification technique - Decision science – Trees & clustering
- Decision strategies without outcome probabilities & with outcome probabilities
- Utilities in decision making
- Text analytics (Introduction to document term matrix and random forest models)
- Boosting and Bagging, Support vector machines
- Introduction to deep learning
- Prescriptive analytics – Linear & Integer Optimization
- Advanced analytics Case studies and real-world applications using R

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
No textbook is prescribed. Course handout will be provided				
Reference Books				
1	Business Analytics	James Evans	Pearson,	2nd Edition,
2	Business Analytics	U Dinesh Kumar	WILEY	1st Edition
3	Data Mining and Business Analytics with R	Johannes Ledolter	WILEY	1st Edition
4	R for Data Science	Hadley Wickham & Garrett Grolemund	O'REILLY	1st Edition

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62831	Introduction to Marketing Analytics	1.5	0	0.5	2

Introduction

The goal of this course is to develop a disciplined process for addressing marketing issues and problems in a variety of settings, and to give students the tools and background necessary to think through marketing and business problems. The course helps in developing these skills in a deep-rooted manner so that students retain the marketing skills learnt through the course. Live projects would encourage students to apply the concepts and generalizations to a real-life product or service. The general route to be followed in the course is concept learning followed by illustration and finally application of the concepts in a real setting as possible within the boundaries of the course and the institutional educational setup.

Intended learning outcomes

- *Articulate* the major marketing concepts and models learnt through the course through the analysis in various software
- *Analyse* the importance of marketing as a function in a business organization using data backed decision making process
- *Apply* *and* *evaluate* to the linkages of marketing as a function to other functions within a business organization

Contents

Module 1

- Introduction to Analytics: Importance of analytics in business world, data driven decision making, and uses of analytics in various fields of E-commerce, FMCG, Media industry etc.
- Summarizing the Marketing Data: Analysing the sales data with various angles. Use of Pivot Table to understand and analyse the data. Use of real-world data to explain the example.
- Pricing Strategy for optimization: Understanding the pricing concept and how analytics can be used to optimize it. Use of Excel Solver to Optimize the Power Demand Curves
- Price Bundling: Understanding the meaning and use of price bundling

Module 2

- Market Forecasting using simple Linear Regression and Correlation: Understanding the importance of forecasting in Marketing and thus using Simple Linear Regression to summarize various relationships
- What do customers want – Conjoint Analysis: Understanding the basic principles of consumer behaviour and interpreting the results through Conjoint analysis

Module 3

- Calculating Lifetime Customer Value: Understanding the basic customer lifetime value template. Assessing its importance and value through simple case study
- Retail analytics: Understanding the market lift analysis and calculation of lift for two products. How to allocate retail space and resources

Module 4

- Advertising analytics: Measuring the Effectiveness of advertising spend and understanding the various media selection models

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
4. Text Book				
No textbook is prescribed. Course handout will be provided				

5. Reference Books				
1	Marketing Analytics	Wayne L Winston	Wiley Publication	1e
2	Cutting-Edge Marketing Analytics- Real World Cases and Data	Rajkumar Venkatesan Paul Farris Ronald T. Wilcox	Wiley Publication	2e

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62832	Supply Chain Analytics	1.5	0	0.5	2

1. Introduction

This course is designed primarily for students seeking an Analytics career in different organizations. The course should be of special importance to individuals who are seeking careers in consulting in operations and supply chain domain. This course is designed to help students master the analytical tools and techniques like optimization and simulation that are useful in designing and managing supply chains. The emphasis will be on how different analytics models can be used in some fundamental supply chain applications such as transportation, capacity allocation, production planning, network flow, aggregate planning, sales & operations planning, and network design.

Intended learning outcomes

- To understand different decision domains in supply chain analytics
- Understand the key metrics and parameters in Supply Chain Analytics
- Understand the purpose of various analytical models
- Apply Descriptive, predictive and prescriptive analytics in Supply Chain
- Apply modelling and optimization techniques to analyse supply chain
- Create simulation models for different supply chain scenarios and problems

Contents

Module 1: Introduction to Supply Chain Analytics

- Source Analytics (Strategic Sourcing, Supplier Management, Order Management)
- Make (Production) Analytics (Production Planning, Workforce Management, Inventory Management)
- Move Analytics (Fulfilment Diagnostics, Distribution and Logistics Planning, Transportation Management)
- Sell Analytics (Demand Planning, Product Selection, Pricing and Promotion)

Module 2: Supply Chain Analytics – Descriptive Analytics

- Visualization and Dashboard

Module 3: Supply Chain Analytics – Predictive Analytics

- Demand Forecasting
- Inventory Analytics

Module 4: Supply Chain Analytics – Prescriptive Analytics

- Green Field and Brown Field Analysis
- Network Optimization
- Transport Optimization

Module 5: Supply Chain Simulation

- Descriptive Modelling with Simulation
- Running Simulation experiments
- Integrating bullwhip effect and ripple effect into simulation models

Suggested projects:

The objective of the analytics project is to provide students with chance to apply the concepts and methods learned in class to a real world problem. The project is to be done in groups of four or five students. The project proposal must be discussed and approved by the instructor in its early stage.

A sample project:

1. Creating simulation model for responsive supply chains of different sectors (Healthcare, FMCG, Manufacturing etc) to mitigate ripple effect of events like COVID-19 epidemic

Software Tools

- MS® Excel
- SAS® Forecast Studio (Academic Version)
- AnyLogic® Simulation (Academic Version)

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
No textbook is prescribed. Coursehandout will be provided				
Reference Books				
1	Managing Supply chains- A logistics approach	John J Coyle, C John Langley Jr, Robert A Novack, Brian J Gibson	Cengage Learning	9 th Edition
2	Big Data Driven Supply Chain Management: A Framework for Implementing Analytics and Turning Information into Intelligence	Nada R. Sanders	FT Press Analytics	1 st
3	Analytics in Operations/Supply Chain Management	Muthu Mathirajan , Chandrasekharan Rajendran , Sowmyanarayanan Sadagopan, Arunachalam Ravindran , Parasuram Balasubramanian	IK International Publishing House Pvt. Ltd	
4	Modelling the Supply Chain. Duxbury Thomson Learning	Jeremy F. Shapiro	Duxbury Thomson	
5	Designing and Managing the Supply Chain concepts, Strategies and Case studies	D. Simchi-Levi, P. Kaminsky, E. Simchi-Levi, and Ravi Shankar	Tata McGraw Hill	3rd
6	Quantitative Models for Supply Chain Management	Sridhar Tayur, Ram Ganeshan, Michael Magazine	Kluwer Academic Publishers	1999

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62833	Analytics Toolbox	1.5	0	0.5	2

Introduction

Major data exercises at industry level find excel applications extremely useful. Thus, the paper includes the use of excel functionalities directed for analytics works. R and Python programming languages are rapidly finding their usage in industries for data science applications. Python programming Lab will be a part of learning in this course. Extensive use of Python libraries for data science fundamentals and statistical applications are major learning objectives. Data visualization and reporting are the crux of data science applications. Tableau provides powerful and easy drag and drop GUI applications for better plotting and reporting methods. The course will provide the above application related knowledge to make the students conversant for usage of the same in data science projects.

Intended Learning outcome

- Understand features of Python, Excel, Tableau, and PowerBI software packages.
- Analyze data using Python, Excel, Tableau, and PowerBI software packages.

Course Contents:

Module 1: Data Visualization with Tableau and PowerBI

- Best Practices in Data Visualization
- Visualization with Tableau (Plots, dashboarding, and reporting using Tableau)
- Visualization with PowerBI (Dashboarding, Interactive reports)

Module 2: Data Analytics using Excel

- Excel fundamentals
- Advanced excel methods for simulations and analytics
- What-if analysis, regression analysis, hypothesis tests.

Module 3: How to Analyze (Conceptual tools)

- How to Analyze? A structural approach to the data problems and solutions
- Minto Pyramid etc.

Module 4: Data Analytics using Python

- Programming in Python
- Introduction to functions in Python
- Descriptive statistics using Python

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
No textbook is prescribed. Course handout will be provided				
Reference Books				
1	The Big Book of Dashboards: Visualizing Your Data Using Real-World Business Scenarios	Steve Wexler, Jeffrey Shaffer, and Andy Cotgreave	John Wiley & Sons	Latest
2	Visualize This: The Flowing Data Guide to Design, Visualization, a	Nathan Yau	John Wiley & Sons	Latest

3	Storytelling with Data: A Guide for Business Professionals	Cole Nussbaumer Knaflic	John Wiley & Sons	Latest
4	Business Analytics	James E Evans	Pearson	3rd
5	Machine Learning with Python Language	Abhishek Vijayvargia	BPB Publication	Latest
6	Let Us Python	Yashavant Kanetkar	BPB Publication	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62834	HR Analytics	1.5	0	0.5	2

Introduction

This course is designed with specific intent to enable students understand the application of system design and importance of data related to all the verticals of human resources. The course also intends to introduce students to the scope, techniques, benefits and challenges of analytics in HRM. Analytics has played a critical role in this journey of HR transformation. This course will specifically focus on the applied methods and techniques with an output orientation for improving the human resource functions in large scale organizations. The frameworks, models, and hands-on analytical approaches will equip the participants with developing the SMART (specific, measurable, attainable, reliable, and time bound) targets and identifying business contributions of the HR function in their respective organizations.

Intended Learning Outcomes

- Understand the overview of HR system design and models
- Understand the basics of technology and its application in HR Processes
- Understand the challenges and future of analytics in managing human resources.

Course Content

- Introduction on Systems Design. Systems Design, Living Systems Design, HR Systems Design, Documentation of Policies, Flow Diagrams and Work Instructions Automation and Analytics. Basic Automation, Increase in productivity through analytics, Synchronizing process change with automation, HR Analytics in perspective, Challenges and Issues
- Agile HR Analytics. Explain the people analytics cycle, Understand the agile framework, Connect agile principles with HR challenges
- Proving Analytics value by using the HR Value Chain. Understand how the HR Value Chain works, Describe how the HR Value Chain can be used to achieve business outcomes from HR, Explain how HR processes work in conjunction with HR outcomes and organizational outcomes,
- Treatment of HR Data. Understand how to manage data and automate it, Visualizing data and analytics, Describe the importance of a pilot analysis, Explain capability & compliance building of HR analytics, Describe what HRIS is not, Explain the different tools HR analytics can use
- Data Cleaning and HR Metrics. Explain the purpose of HR metrics/data, Understand the three categories of performance, Describe the performance of several HR operations, Create several descriptive statistics in R, Understand how to clean HR data in R, Transform HR data into plots and graphs in R, Describe how to transform strategic goals to HR metrics.
- Statistics in HR. Correlation Analysis, Regression Analysis, HR Analytics maturity
- Data Reporting Insights. Understand how predictive analytics work, Describe the use of machine learning

ninginHRanalytics,Explainthedifferencebetweenpredictive®ressionanalyses,Describethe4r
ulesofreportingHRanalytics,UnderstandthemindsetinreportingHR analytics, Explain the
importance of datavisualization

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Textbook				
1	Human Resource Analytics: Theory and Application	Swati Dhir and Suparna Pal	Cengage	1 ST , 2021

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62835	Credit Risk Analytics	1.5	0	0.5	2

Introduction:

Credit is essential in the modern world and creates wealth, provided it is used wisely. Credit risk is the largest risk in any bank's asset portfolio—on balance-sheet as well as off balance-sheet. Banks hold a wide variety of assets with varying characteristics of credit risk. This course will provide approaches to measure credit risk that is fully aligned with the regulatory approach under the Basel Accords. The methodology for measuring credit risk of different types of credit portfolios will be discussed—segmentation based methods for retail portfolios as well as a rating based approach for corporate credits. The course also covers the analytical methods of model validation.

Intended Learning Outcomes:

- An understanding of different measures of credit risk
- Learning of traditional credit models— credit rating & credit scoring— strengths and weaknesses
- A knowledge of different regulatory approaches to measuring credit risk
- A practical hands on knowledge of estimation of different components of credit risk— PD, LGD and EAD

Course Content

- Introduction: Market vs. credit risk; Statistical Basis for Modeling Credit; Advantages and Limitations of Credit Appraisal and Default
- Prediction Methods: The elements of credit risk: Default; Exposure; Loss given default or recovery; Expected, unexpected loss, and VaR
- Models of Single Counterparty Default Risk:
- Overview: From traditional to modern credit risk models
- Scoring, logit and probit; Applying Scoring Models to Firms & Consumer Credit Scoring; Behavioural Scoring Models
- Rating-based models: Credit Metrics, Credit Portfolio View
- Asset-based (structural) models: Merton's model and its implementation by KMV, first passage models, Leland and Toft's endogenous bankruptcy model
- Intensity-based (reduced-form) models
- Actuarial Approach: Mortality tables, Credit Risk+
- Portfolio Models of Default and Recovery: Credit Metrics; Correlated defaults;

Copula distributions; KMV for portfolios

- Regulatory issues under Basel II and Basel III; standard approach versus IRB approaches for credit risk; Modelling PD, LGD and EAD; Calculation of capital charges
- Credit risk management: Economic capital; Exposure mitigation--Netting, collateral, limits, guarantees
- Credit derivatives: Credit default swaps, Total return swaps, collateralized debt obligations

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
4. Reference books				
1	Frontiers in Credit Risk: Concepts and Techniques for Applied Credit Risk Measurement	Gordian Gaeta and Shantaram Alibhai,	Wiley	
2	Credit Risk Models & Management	David Shimko	Risk Books	2nd
3	Credit Risk Measurement: New Approaches to Value-at-Risk	Anthony Saunders	Wiley	

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62836	Advanced Statistics and Probability for Data Science	1.5	0	0.5	2

1. Introduction:

The demand for insight from data has gained importance over the years. The availability of data has spurred such a demand. The traditional and conventional level of insight has been questioned and lacked competitive advantage. Organizations want to have a comprehensive analysis rather than isolating individual data and analysing it. Complexity and data volume has created a premium for accuracy in decision making. This course will enable students to appreciate such factors, question existing analysis process, learn new methodologies and techniques. This course cuts across disciplines and can be used in all areas of investigation.

Intended Learning Outcomes

This course will target to achieve intermediate to expert level of learning in statistics and probability theories aimed at business decision making.

Course Contents:

- Basic Probability Theory (Probability spaces, Conditional probability, Independence)
- Random Variables (Definition, Discrete & Continuous random variables, Conditioning on an event, Functions of random variables, Generating random variables)
- Multivariate Random Variables (Discrete & Continuous random variables, Joint distributions of discrete and continuous variables, Independence, Functions of several random variables, Generating multivariate random variables, Rejection sampling,
- Expectation (Expectation operator, Mean and variance, Covariance, Conditional expectation,
- Random Processes (Definition, Mean and autocovariance functions, Independent identically-distributed sequences, Gaussian process, Poisson process, Random walk
- Convergence of Random Processes (Types of convergence, Law of large numbers, Central limit theorem, Monte Carlo simulation)
- Markov Chains (Time-homogeneous discrete-time Markov chains, Recurrence, Periodicity, Convergence, Markov-chain Monte Carlo)
- Frequentist Statistics (IID sampling, Mean square error, Consistency, Confidence intervals, Nonparametric model estimation, Parametric model estimation)
- Bayesian Statistics (Bayesian parametric models, Conjugate prior, Bayesian estimators,)
- Hypothesis testing (Parametric testing, Nonparametric testing)
- Linear Algebra (Vector spaces, Inner product and norm, Orthogonality, Projections, Matrices, Eigen decomposition, Eigen decomposition of symmetric matrices)

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
4. Text Book				
1	Mathematical Statistics and Data Analysis	John A. Rice	Thompson	
5. Reference Books				
1	Miller & Freund's Probability and statistics	Richard A. Johnson	PHI	
2	Statistics	David Freedman, Robert Pisani, Roger Purves		

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62814	Machine Learning & Artificial Intelligence using Python	1.5	0	.5	2

Introduction

The objective of this course is to help students understand the concepts, methods and application of machine learning and AI in a ever changing business environment. Students will learn supervised learning applications using decision tree, Random forest and Artificial neural networks. Subsequently, they will learn unsupervised learning techniques like clustering, dimensionality reduction and deep learning.

Intended learning outcomes

- Develop an interest among students to learn from data and understand various learning algorithms
- To familiarize students on application of Python in machine learning
- Differentiate and relate unsupervised, supervised and deep learning techniques
- Understand, formulate and interpret various machine learning problems to real world business applications
- Understand the use of AI in business decision making process

Course content

- **Introduction to Machine Learning:** Basic concepts of AI, machine learning and deep learning, Categories of machine learning algorithms, Justification of machine learning applications in real world business problems, Understanding the framework of machine learning model, Justification of using Python as a language of machine learning using open source package like Anaconda and google colab as a free jupyter notebook environment. Understanding bias and variance trade off.
- **Descriptive Analytics using Python:** Understanding descriptive analytics, loading of dataset to perform exploratory data analysis, dataset filtering, grouping, joining, ordering, slicing, indexing, cross tabulation, missing data analysis, preparation of various plots and comparing distributions using python.
- **Simple and Multiple Linear Regression Models** □ Understanding concept of simple and multiple linear regression in predictive analytics, regression model diagnostics (Residual vs fitted Plot, Normal Q-Q plot, Scale Location Plot, Residuals vs Leverage Plot), understanding splitting of dataset into training and test datasets, accuracy measures like R square, adjusted R square, RMSE and model summary using python.
- **Classification Models :** Introduction to binary logistic regression, odd ratio, logistics function, logit, model building, understanding model summaries, accuracy measurement, interpreting confusion matrix and ROC Curve, treatment of categorical features, Application of Multinomial logistic regression using python, building decision tree using entropy and Gini criteria, accuracy measurement, over fitting, pruning and introduction to ensemble learning like bagging (ex: Random Forest) and boosting (AdaBoost).
- **Clustering:** Importance of clustering as an unsupervised learning algorithm, understanding clustering techniques, application and interpretation of k means clustering using Python datasets, features normalization, Interpretation of clusters. Application of PAM algorithm and Hierarchical clustering in Python using various datasets.
- **Association Rule Mining Applications:** Introduction to Associate Rule Mining/Market Basket

analysis, understanding concept of measures like support, confidence and lift, loading datasets to apply a priori algorithm, interpreting interesting association rules. Introduction to ECLAT algorithm and FP Growth algorithmic to deal with huge datasets using Python.

- **Introduction to Neural Network and Deep Learning:** Understanding neural networks, perceptron algorithm for binary classifiers using Python, elementary introduction to ANN, CNN and RNN. Basic understanding of Restricted Boltzmann Machine and Auto encoders

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	ArtificialIntelligence andMachineLearning	ChandraSSV	PHI	Recent
Reference Books				
1	ArtificialIntelligence andMachineLearningforBusiness: A No-NonsenseGuideto DataDrivenTechnologies	Steven Finlay	Atlantic Publishersand Distributors	Recent
2	MachineLearning	Tom M. Mitchell	TataMcGraw-Hill	Recent
3	UnderstandingMachineLearning: From TheoryToAlgorithms	ShaiShalev-Shwartz	JBC Publisherand Distributor	Recent
4	ArtificialIntelligence 3e:AModernApproach	Russels	Pearson	Recent
5	R DeepLearningCookbook	Dr. PKS PrakashandAchyutun i SriKrishna Rao	<u>AtlanticPublis hersandDistrib utors</u>	Recent

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62601	Data Mining and Business Intelligence	1.5	0	.5	2

Introduction

The objectives of this course are to impart knowledge about the emerging trends of Data Mining and Business Intelligence and to help students understand and appreciate the importance of making meaningful use of large volume of data for the purpose of decision-making in the complex and ever-changing business environment. The students will be exposed to real-life business applications as BI student projects.

Intended learning outcomes

- Differentiate decisional systems from operational systems
- Understand and apply data mining tools and techniques
- Understand the role of BI systems in supporting decision making in Business World
- Visualize and able to prepare multi dimensional models and Dashboards
- Understand best practices and Trends of Business Intelligence

Course content

- **Introduction to Data Warehouse :** Introduction to Data Warehouse, Operational vis-a-vis decisional Systems, Necessity and commercial importance of a Data Warehouse , Enterprise Data warehouse and Data Mart, 2 tier and 3 tier Architecture, ETL Process, Multi- dimensional modeling :Multi-dimensional representation of data, Normalization vis-a-vis Dimensional Modeling, Star Schema ,Snow Flake Schema and Fact Constellation.
- **Introduction to Data Mining:** Evolution of Data Mining, applications in business , concepts, overall functionalities and challenges, KDD vis-a-vis Data Mining, DBMS vis-a-vis Data Mining
- **Frequent Pattern Mining:** Association rule mining introduction, Concept of support, confidence and lift with an example, Sense of rule quantity, rule quality and importance of

FIM Algorithm. Application of A Priori algorithm as FIM algorithm to find out interesting rules using R. Application with large dataset using ECLAT and FP Growth algorithm using R.

- **Classification Techniques and it's Applications :** overview , Hold out and Cross validation approaches, concept of confusion matrix , issues of pre processing like data cleaning, data transformation and feature selection, Bias variance trade off , approaches to missing data analysis and combining classifiers for better model performance (Bagging and Boosting), Concept, decision tree construction, Information gain, Entropy and gini value significance for ID3.
- **Clustering Techniques:** Introduction, distance function, applications, measurement of similarity , concept of squared error and absolute error criterion , Explanation of K means Clustering with an example of R dataset, Understanding PAM Algorithm with example with R dataset. Application of DBSCAN and BIRCH Algorithm using very large Datasets using R
- **Introduction to BI, Query and Reporting:** Understanding Business Intelligence technology. Market for business Intelligence: Operational and tactical business Intelligence and driving forces of BI Market, Component of Business Intelligence Architecture, Business Query and Reporting, concepts of 3 dimensional reporting using data cubes, Slicing, dicing and pivoting, Multidimensional BI Reporting.
- **Power BI Applications :** Introduction, understanding architecture of power BI, Comparison with Tableau, Data transformation with power BI Desktop, Introduction to Power BI Data Modeling, Data

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Data Mining	Pudi, VikramRadhakrishna, P.	OxfordPublishing Press	Latest
2	SuccessfulBusinessIntelligence	Howson, Cindi	McGrawHills	Latest
Reference Books				
1	Decision Support And BusinessIntelligence Systems	Efrain,Turban(et al	Pearson	Latest
2	BusinessIntelligence: DataMiningAnd OptimizationForDecision	Vercellis, Carlo	JohnWiley	Latest
3	Data Mining ForBusinessIntelligence:Concepts,Techniques And ApplicationsInMicrosoftOffice Excel WithXLMiner	Galit, Shmueli (et al)	WileyIndia	Latest
4	Data MiningExplained:AManager's GuideTo Customer-Centric BusinessIntelligence	Delmater, Rhonda Hancock, M	DigitalPress	Latest
5	BusinessIntelligenceInTheDigitalEconomy:Opportunities,Limitations AndRisks	Raisinghani,Mahesh	IGIPress	Latest
6	MakingBetterBusinessIntelligence DecisionsFaster	Vitt, ElizabethLuckevic, MichaelMisner,Stacia	MicrosoftPress	Latest

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62838	Multivariate Data Analysis	1.5	0	0.5	2

Introduction

This course is designed to broaden and enrich a student's knowledge and understanding of statistical concepts. Multivariate statistical techniques can be used to analyze data in various fields: Finance, Production and Operations, Accounting, Marketing, and Personnel Management, etc. Through examining actual applications in various fields, and in-class exercises involving real-world data, students can apply the techniques to topics such as consumer and market research, supply chain analytics, creditworthiness and risk assessment, etc. and learn how to make better business decisions.

Intended Learning Outcomes

- Acquire comprehensive knowledge of Multivariate statistical methods, Select appropriate methods of multivariate data analysis, given multivariate data and study objectives.
- Use SPSS and/or open source programs to carry out multivariate data analyses. Interpret results of multivariate data analyses.
- Be able to view the topics of this course in a larger business/economic perspective. Be able to update knowledge of presentation and reporting techniques

Course Content

- **Module 1** (Overview of Multivariate Methods): Types of Multivariate techniques, Structured approach to multivariate model building
- **Module 2** (Data Preparation for Multivariate Analysis). Assumptions underlying Multivariate Analysis, Missing Data, Outliers, Data transformation
- **Module 3** (Interdependence Techniques). Exploratory Factor Analysis, Cluster Analysis
- **Module 4** (Dependence Techniques). Multiple Regression Analysis, MANOVA – Extending ANOVA, Multiple Discriminant Analysis, Logistic Regression
- **Module 5** (Multiple-criteria decision-making (MCDM) Techniques): Conjoint Analysis, Analytic Hierarchy Process (AHP), Goal Programming

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1	Multivariate Data Analysis	Joseph F Hair/ Barry J. Babin/ Rolph E. Anderson/ William C. Black	Cengage Publication	8th
Reference Books				
1	Discovering Statistics Using IBM SPSS Statistics	Andy Field	SAGE Publication	4 th
2	Applied Multivariate Statistical Analysis	Johnson R.A. and Wichern D.W	Pearson Publication	6 th
5	Using Multivariate Statistics	Barbara G. Tabachnick, Linda S. Fidell	Pearson	6 th

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62839	Predictive Analytics using SAS	1.5	0	0.5	2

Introduction

SAS is still one of the most commonly used tools in the business analytics industry. This course is intended to introduce students to SAS® (Enterprise Guide and Enterprise Miner) and to have hands-on exercise using SAS® for Predictive Analytics. Through examining actual applications in various fields, and in-class exercises involving real-world data, students can apply the techniques to topics such as customer segmentation, consumer and market research, credit worthiness and risk assessment etc. and learn how to make better business decisions. The course includes topics dealing with ANOVA, Linear and Logistic Regression, Decision trees, Clustering and Segmentation using SAS® (Enterprise Guide and Enterprise Miner).

Intended Learning Outcomes

Learning Outcome - Knowledge

- Acquire comprehensive knowledge of Predictive Analytics and Pattern Discovery
- Select appropriate methods of predictive analytics, given data and study objectives.

Learning Outcome – Software Skills

- Use SAS® (SAS Studio and SAS Enterprise Miner) to carry out data analyses.
- Assess model fit and implementation Learning

Outcome - General Competence

- Be able to view the topics of this course in a larger business/economic perspective
- To have updated knowledge of presentation and reporting techniques

Course Content

Module 1: Introduction to Predictive Analytics

- Predictive Analytics in various industries
- Predictive Analytics Approach

Module 2: Introduction to SAS Studio and SAS Enterprise Miner

- SAS Studio Interface (Library, Folders)
- SAS Enterprise Miner Interface (SEMMA)

Module 3: Predictive Analytics using SAS Studio

- Multiple Linear Regression
- Predictive Regression Models
- GLM and Logistics Regression
- Rapid Predictive Modeler

Module 4: Predictive Analytics using SAS Enterprise Miner

- Cluster Analysis
- Market Basket Analysis
- Regression Models
- Decision Trees
- Neural Networks
- Comparing various Models and choosing the best model for a business problem Suggested

projects:

The objective of the analytics project is to provide students with chance to apply the concepts and

methods learned in class to a real world problem. The project is to be done in groups of four or five students. The project proposal must be discussed and approved by the instructor in its early stage.

1. Developing Credit Score Cards by using Credit Scoring in SAS Enterprise Miner
2. Create a product recommendation system using Market Basket Analysis in SAS Enterprise Miner

Software Tools

- **SAS® STUDIO & SAS® ENTERPRISE MINER (Academic Version)**

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
4. Text Book				
	No textbook.			
5. Reference Books				
1	Business Analytics Using SAS Enterprise Guide and SAS Enterprise Miner: A Beginner's Guide, ,	Olivia Parr-Rud	SAS Institute	1 st
2	SAS Essentials- MASTERING SAS FOR DATA ANALYTICS	Alan C. Elliott, Wayne A. Woodward	Wiley Publication	2 nd
3	Business Analytics: The Science of Data - Driven Decision Making	U Dinesh Kumar	Wiley India	1 st
4	Predictive Modeling with SAS Enterprise Miner Practical Solutions for Business Applications, ,	Kattamuri S. Sarma	SAS Institute	3 rd

Course Code	Name of the course	Credits			
		L	T	P	Total
OBM62840	Text Mining and Analytics	1.5	0	0.5	2

Introduction:

Text is one of the major forms of data. It is overwhelmingly present in books, internet, reports and other documents with potentially host of information and knowledge hidden among them. These analyses can create potentially actionable knowledge.

Intended Learning Outcomes

- To study and understand the nature and pattern of text as a data source for knowledge discovery.
- To study a few techniques and tools which automatically process text and various levels of analysis.
- To demonstrate and apply the outcomes of text analysis.
- Supplement or corroborate text analysis data with other data analysis.
- Exposure on dealing with multimedia data mining

Course Contents:

- Introduction to text analytics
- How to extract text data
- Basic natural language processing

- Text categorization and clustering,
- Document summary
- Sentiment analysis
- Social network and Social media analysis
- Text visualization.
- Audio visual data mining
- Open source tools and capabilities

Text and reference books

Sl. No.	Title	Author(s)	Publisher	Edition
Text Book				
1				
2. Reference Books				
1	Text Mining with R – A tidy approach	Julia Silge & David Robinson	O'Reilly	First
2	Text Analytics with Python	Dipanjan Sarkar	Apress	Second

MASTER OF COMPUTER APPLICATIONS

[M. C. A.]

COURSE STRUCTURE & SYLLABUS

PROGRAMME EDUCATIONAL OBJECTIVES

They are expected to accomplish the following objectives in a few years after MCA graduation:

PEO1: Pursue a successful career in the field of computer applications, contribute significantly to their profession in industry, research and academia or undertake entrepreneurial endeavours.

PEO2: Continuously learn, engage and update themselves to carryout independent or collaborative research, and address constantly evolving technological and global challenges in their field of expertise.

PEO3: Develop leadership skills and demonstrate professional, social and ethical responsibilities as an individual.

PROGRAMME OUTCOMES

Master of Computer Applications (MCA) programme is designed to ensure that each student acquires the desired competencies and on successful completion of the programme, the students are expected to:

PO1:Computational knowledge: Apply the knowledge of mathematics and computer fundamentals to solve real life problems.

PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex problems in their program of study using knowledge of mathematics and computer science.

PO3: Design/development of solutions: Design solutions for complex problems and design software components that meet the specified needs with appropriate consideration for the public health and safety, cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use application-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern IT tools to model complex solutions with an understanding of their limitations.

PO6: The professional and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

PO7: Environment and sustainability: Understand the impact of the professional solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the software professional practices.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex technical activities with the community and with society at large, write and present substantial technical reports/ documents, and give and receive clear instructions.

PO11: Project management and finance: Demonstrate knowledge and understanding of the software and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAMME SPECIFIC OUTCOMES

PSO1: Ability to demonstrate a degree of mastery in the area of computer applications through the advanced knowledge of data acquisition, data analytics, big data, pattern recognition and knowledge discovery.

PSO2: Ability to independently carry out research/investigation and developmental work to solve practical problems.

PSO3: Develop sound knowledge and skill sets to develop and expand professional careers in fields related to human-computer interaction and management of industrial processes for the design and implementation of intelligent systems

FIRST SEMESTER

OMC40101 PROGRAMMING AND DATA STRUCTURES CREDITS- 3

UNIT - I

C Language Fundamentals: Character set, Identifiers, keywords, data types, Constants and variables, statements, expression, operators, precedence of operators, Input-output, control statements, control structures.

UNIT - II

Arrays, functions, strings, recursion, Tower of Hanoi problem, storage classes, structures, Union, pointer and File Handling.

UNIT - III

Development of Algorithms: Notations and Analysis. Storage representation of array, sparse matrix, Insertion and Deletion from an array, merging of two sorted arrays, Stacks and Queues, Application of stack: Infix to Postfix expression, Evaluation of Postfix expression.

Sorting and Searching Techniques: Selection sort, Bubble sort, Heap sort, Quick sort, linear search, Binary Search.

UNIT - IV

Linked Lists: Singly linked lists, linked stacks and queues, Operations on Polynomials, Linked Dictionary, Doubly Linked Lists, Circular Linked Lists. Dynamic Storage Management.

Binary Tress: Binary search Tree, General Trees, Tree Traversing, Operations on Binary Trees, Expression Tree, Height Balanced Trees.

Graphs: Representation of Graphs - BFS, DFS, Hash Table Methods.

Reference Books:

1. ReemaThareja, *Data Structures Using C*, 2nd edition, Oxford Publication, 2014.
2. Ellis Horowitz, SartajSahani, *Fundamentals of Data Structures in C*, 2nd edition, University Press, 2008.
3. E. Balagurusamy, *C programming and Data Structures*, 4th edition, Tata McGraw-Hill Publishing Company Ltd, 2009

COURSE OUTCOMES:The students will be able to

CO1: Design correct programs to solve problems.

CO2: Compare various programming, and apply the concept of decision structures, loops and functions.

CO3: Choose efficient data structures and apply them to solve problems.

CO4: Analyze the efficiency of programs based on time complexity.

CO5: Prove the correctness of a program using loop invariants, pre-conditions and post- conditions in programs

CO6: Design reusable ADTs.

OMC40103 COMPUTER ORGANIZATION AND ARCHITECTURE CREDITS-3

UNIT - I

Fundamentals of Digital Electronics: Number systems, Floating Point Arithmetic, Error Detection and Correction, Boolean algebra, Minimization techniques, Sum of min terms, Product of max terms, Simplification using Karnaugh's Map (up to 4 variables), Combinational Circuits, Sequential Circuits, Shift Register, Counters, Design of Combinational and Sequential Circuits.

UNIT - II

Basic Computer Organization and Design: Von Neumann Architecture, Instruction codes, Computer registers, Computer instructions, Timing and Control, Instruction cycle, Memory- Reference Instructions, Input-output and interrupt, Design of Basic computer, Design of Accumulator Unit.

UNIT - III

Central Processing Unit: Introduction, General Register Organization, Stack Organization, Instruction format, Addressing Modes, Data transfer and manipulation, Program Control, Reduced Instruction Set Computer (RISC), Pipeline Processing, Parallel Processing.

Input-Output organization: Peripheral Devices, I/O output interface, Asynchronous data transfer, Modes of transfer, Priority Interrupt, DMA, Input output Processor, Serial Communication.

Memory Organization: Memory Hierarchy, Main Memory, Cache Memory.

UNIT - IV

Programming the Basic Computer: Introduction, Machine Language, Assembly Language, the Assembler, Program loops, Programming Arithmetic and Logic Operations, Subroutines, I-O Programming, Ten Advanced Optimization of Cache Performance, Memory Technology and Optimization, Protection, Crosscutting Issues, Memory Hierarchies in the ARM Cortex-A8 and Intel Core i7.

Reference Books:

1. *Mano M Morris, Computer System Architecture, 3rd Edition (Updated), Pearson, 2016.*
2. *William Stallings, Computer Organization and Architecture: Designing for Performance, 9th Edition, Pearson, 2013.*
3. *Hamacher, Computer Organization, 5th Edition, Mc Graw Hill Education, 2011.*
4. *John P Hayes, Computer Architecture and Organization, 3rd Edition, Mc Graw Hill Education, 2017.*

COURSE OUTCOMES:

The students will be able to

CO1: Illustrate the working of Computer Systems.

CO2: Classify and interpret the Instruction Set Architecture.

CO3: Solve problems related to the advanced pipelining techniques.

CO4: Analyze the system performance.

CO5: Prioritize the current state in memory system design.

CO6: Design alternate/ advanced architecture using data flow computing.

OMC40105 DISCRETE MATHEMATICS CREDITS-3

UNIT I

Sets and Proposition

Basics: Finite and Infinite Sets, Combinations of Sets, Multisets, Venn Diagrams.

Propositional Logic: Propositions and Logical Operations, Functionally complete set of connectives, Well Formed Formulas, Laws of equivalence, Normal forms, Predicate calculus, Inference Theory.

Notion of Proof: Direct and Indirect Proof, Inductive proofs.

UNIT II

Relations and Functions, Counting Techniques

Relations: Properties of Relations, Matrices of relations, Closure operations on relations, Equivalence Relations, Computer Representation of Relations, Partial Ordering Relations and Lattices, Properties of Lattices, Hasse Diagram of partially ordered set.

Functions: Introduction to functions and its types, Function for Computer Science, Discrete numeric Functions, Composition of Functions, Invertible Functions, Recursive Functions, Generating functions.

Counting- Basics of Counting Techniques, Pigeonhole Principle, Generalized Permutations and Combinations, Recurrences Relations.

UNIT III

Graph Theory- Basic Concept of Graph Theory and Terminology, representation of Graphs, Bipartite, Regular, Planar and connected graphs, reachability and connectedness.

Matrix representation of graphs, Storage representation and manipulation of graphs, Euler graphs, Hamiltonian path and circuits, graph traversals, shortest path in weighted graphs, Graph Isomorphism and Homomorphism.

Trees: Introduction, Undirected Trees, Binary search trees, Spanning trees, Minimum spanning trees, Kruskal's Algorithm, Prim's Algorithm.

UNIT IV

Algebraic Structures: Definition, Properties, Types: Semi Groups, Monoid, Groups, Abelian group, Subgroup, cyclic groups, Factor group, Permutation groups, Normal subgroup, Cosets and Lagrange's Theorem, Homomorphism and Isomorphism of Groups.

Boolean Algebra: Boolean Functions, Representing Boolean Functions, Principal of Duality, Design and Implementation of Digital Networks, Karnaugh maps.

Coding Theory: Codes and Group-codes, Error detection and correction using Group codes, Hamming Code.

Reference Books:

1. K. E. Rosen, "Discrete mathematics and its applications", McGraw Hill International, 7th Edition, 2011.
2. T. Veerarajan, "Discrete Mathematics", Tata McGraw Hill, 2012.
3. B. Kolman, R. C. Busby, S. Ross, "Discrete Mathematical Structures", Prentice Hall of India, 6th Edition, 2010.
4. S. Lipschutz, Discrete Mathematics, Tata McGraw Hill, 2nd Edition, 2005
5. Richard Johnsonbough, "Discrete Mathematics", Pearson Education, 8th Edition, 2018.

COURSE OUTCOMES:

The students will be able to

CO1: Describe fundamental mathematical concepts and terminology.

CO2: Understand circuit design using Boolean algebra concepts.

CO3: Apply counting principles of different types of discrete structures.

CO4: Analysis of recursive definitions.

CO5: Evaluates the techniques for constructing mathematical proofs using examples.

CO6: Design solutions based on Graph Theory, Coding Theory and Group Theory.

OMC40107 DATABASE MANAGEMENT SYSTEM CREDITS-3

UNIT - I

Database & Database users, Characteristic of the database, database systems, Concepts & Architecture, schemas & instances, Data independence, Database languages & interfaces. Relational Data models, Concepts & Relational database constraints, Database design using ER, EER to Relational mapping and Relational algebra.

UNIT - II

Functional Dependencies and its implication, closure rules, Normalization, Decomposition, synthesis approach, 3NF and BCNF, lossless join and dependency preserving decomposition, multi valued dependency & 4NF, Join dependency & 5NF.

UNIT - III

Basics of query processing, Processing of joins, materialized vs. pipelined processing, DB transactions, ACID properties, interleaved executions, schedules, serialisability, concept of database recovery and backup.

UNIT-IV

Concurrency control techniques, Locking and management of locks, 2PL, locking techniques deadlocks, Optimistic Concurrency control, Comparison of Concurrency control methods, XML and relational databases and big data concept.

Reference Books:

1. R. Elmasri and S. B. Navathe, *Fundamentals of Database Systems*, Pearson Education, Inc., 7th Edition, 2015.
2. Silberschatz, H. F. Korth and S. Sudarshan, *Database System Concepts*, Tata McGraw- Hill, 6th Edition, 2011.

COURSE OUTCOMES:

The students will be able to

CO1: Define basic database concepts, role of a database management system including the structure and

operation of the relational data model.

CO2: Compare simple and moderately advanced database queries using SQL and Relational Calculus.

CO3: Apply logical database design principles, including E-R diagrams and database normalization.

CO4: Analyze the concept of a database transaction and related database facilities, including concurrency control, journaling, backup and recovery, and data object locking and protocols.

CO5: Evaluate the performance of query processing in distributed database systems.

CO6: Design basic database storage structures & access techniques.

OMC40109 OPERATING SYSTEMS CREDITS-3

UNIT-I

Introduction: Evolution of operating systems, Types of operating systems, Different views of the operating systems, Operating system concepts and structures.

Processes: The process concept, system programmer's view of processes. The operating system's view of processes, Operating system services for process management, scheduling algorithms, Performance evaluation.

UNIT-II

Inter-process Communication and Synchronization: The need for inter-process synchronization, Mutual exclusion, Semaphores, Classical problems in concurrent programming, Critical region, Monitors.

Deadlock: Deadlock criteria, prevention, avoidance, detection and recovery algorithms.

UNIT-III

Memory Management: Contiguous memory allocation, Swapping, paging and segmentation, virtual memory, Page replacement algorithms. Design issues for paging systems, Segmentation.

File Systems: File systems, Directories, File system implementation, Security & protection mechanisms.

UNIT-IV

Principles of I/O Hardware and software: I/O devices, Device controllers, Principles of I/O Software, Interrupt handlers, Device drivers, Device independent I/O software, User space I/O software.

Disks: Disk hardware, scheduling algorithms, Error handling, track-at-a-time caching, RAM Disks.

Clocks: Clock hardware, Clock software.

Terminals: Terminal hardware & software, Memory-mapped terminals, I/O Software.

Reference Books:

1. Silberschatz & Galvin, *Operating system concepts*, 9th Edition, Wiley, 2018.
2. D. M. Dhamdhare, *Operating Systems a Concept Based Approach*, 3rd Edition, McGraw Hill Education, 2017.
3. P. C. Bhatt, *An Introduction to Operating Systems: Concepts & Practice*, 4th Edition, Prentice Hall of India, 2013.
4. Andrew S Tanenbaum and Albert S Woodhull, *Operating System Design & Implementation*, 3rd Edition, Pearson Education, 2015.

COURSE OUTCOMES:

The students will be able to

CO1: Define fundamentals of Operating System.

CO2: Compare processes scheduling algorithms.

CO3: Apply the concepts of memory management, paging and virtual memory.

CO4: Analyze and discuss the policies of synchronization.

CO5: Evaluate the uses of system call.

CO6: Develop interaction techniques among the various components of computing system.

PRACTICALS

OMC49101 PROGRAMMING AND DATA STRUCTURES LAB CREDITS-2

C programming: variables and expression assignment, Loop, if-else, Case statement, break, continue, Single & Multidimensional arrays, Functions, recursion, file handling in C, Pointers, address operator, declaring pointers and operations on pointers

Stack: Problems of stack, evaluation of Arithmetic expressions in infix, prefix, and postfix forms.

Queue: Problems on queues, circular queues, insertion and deletion on queues.

Searching and sorting algorithm: Problems on Binary Search, Quick sort, Bubble sort

List: Problems on single linked list, doubly linked list with list operations, circular list.

Trees: Creation of Binary tree, determination of depth of binary tree, counting nodes, tree traversals, BST.

Graphs: Problems on graphs, Breadth First Search, Depth First Search.

OMC49103 DATABASE MANAGEMENT SYSTEM LAB CREDITS-2

Study features of a commercial RDBMS package such as Oracle and Structured Query Language (SQL).

Laboratory exercises should include defining schemes for the applications, creation of a database, writing

SQL queries to retrieve and manipulate data from the database. Use of host language interface with embedded SQL.

OMC49105

SOFT SKILLS LAB

CREDIT-1

Communication Skills: LSRW (Listening, Speaking, Reading, Writing) Basics, Pronunciation (Do's and Don'ts). Major elements in grammar (Verbs and their types, Tenses, Punctuation and sentence formation) E-mail etiquette and Report writing.

Personality Development: A guide to healthy conversations, Art of Assertiveness, Emotional Intelligence and Critical, Thinking, Body Language, Grooming skills, Stress management

Presentation Skills: Elements of Effective presentation, Structure of presentation, Body language and Voice modulation Presentation tools: Applications, Audience Engagement.

Public Speaking: Speaking Basics, 7Ps of Public Speaking, Confidence Enhancement, Impression management, Feedback handling.

Reference Books:

1. John Seely, *Oxford Guide to Writing and Speaking*, Oxford University Press, 2005.
2. Pillai and Fernandez, *Soft Skills and employability skills*, Cambridge Publication.

SESSIONAL

YG18001 YOGA AND HUMAN CONSCIOUSNESS

CREDITS: 2

UNIT-I

Concept and significance of consciousness: Modern and ancient approach of consciousness, Types of consciousness viz., Jagrata, Svapna, Susupti, Turya, and Turiyatita.

UNIT-II

Preparatory practices: Breathing practices, Suksmavyayama (all 46 practices), and Sthoolavyayama (all 14)

UNIT-III

Dharana practices: Principles and procedure of Antaranga&Bahrangatrataka, Jatrutrataka&Jyotitrataka; Principles and practices of Ajappajapa, Antarmouna, Chakra meditation, Cyclic meditation, and Transcendental meditation.

UNIT-IV

Concept and practice of Dhyana: Concept of Jyoti and Bindudhyana, principle and procedure of Vipassana meditation, Preksha meditation, Transcendental meditation, Brahma kumari Raja yoga meditation, and Yoga nidra.

Reference Books:

1. *Yogic SukshmaVyayama* by DharendraBrahmachari, MDNIY publisher, Ashoka Road, New Delhi
2. *Mandukya Upanishad* by Swami Harsanandsa, R K Mission Publication, Belur math, Kolkata

SECOND SEMESTER (SPRING)

OMC40102

COMPUTER NETWORKS

CREDITS-3

UNIT - I

Introduction Concepts: Goals and Applications of Networks, Network structure and architecture, The OSI reference model, services, Network Topology Design - Delay Analysis, Back Bone Design, Local Access Network Design, Physical Layer Transmission Media, Switching methods, ISDN, Terminal Handling.

UNIT - II

Medium Access Sub Layer: Channel Allocations, LAN protocols, Overview of IEEE standards- FDDI. Data Link Layer - Elementary Data-Link Protocols, Sliding Window protocols, Error Handling.

UNIT - III

Network Layer: Point-to-Point Networks, routing, Congestion control, Internetworking-TCP / IP, IP packet, IP address, IPv4 & IPv6.

TCP/IP Protocol Stack: TCP and UDP, Routing Protocols

Transport and Session Layer: Design issues, connection management, TCP - Window Management. remote procedure call.

Presentation Layer: Design issues, Data compression techniques, cryptography.

UNIT - IV

Application Layer: File Transfer, Access and Management, Electronic mail, Virtual Terminals, DHCP.

Reference Books:

1. B. A. Forouzan, "Data Communication and Networking", 5th Edition, TMH, 2017
2. A.S. Tanenbaum, Computer Networks, 5th Edition, Pearson Education. 2013
3. W. Stallings, Data and Computer Communication, 8th Edition, Macmillan Press, 2017
4. Larry L. Peterson and Bruce S. Davie, Computer Networks: A System Approach, 5th Edition, Morgan Kaufmann Publishers, 2011

COURSE OUTCOMES:

The students will be able to

CO1: Define fundamental concepts of computer networking.

CO2: Classify the basic taxonomy and terminology of computer networking.

CO3: Apply advanced networking concepts.

CO4: Analyze specific areas of networking such as the design and maintenance of individual networks.

CO5: Evaluate routes to create interconnect of nodes.

CO6: Design and implement the protocols used in computer networks.

OMC41104 DESIGN AND ANALYSIS OF ALGORITHMS CREDITS-4

UNIT-I

Growth of Functions, Asymptotic notations, Analysis of Insertion sort, Divide and Conquer technique, Recurrences, Solving Recurrences: Substitution Method, Recurrence tree, Master's theorem, Generating function, Analysis of Merge sort.

UNIT-II

Heap sort, Priority queue, Analysis of heap sort, Data structure for disjoint sets, Disjoint set operations, Greedy Technique: Huffman Codes, Knapsack problem.

UNIT-III

Dynamic programming: Evaluation of Binomial Coefficient, Matrix chain multiplication, Longest Common Subsequence (LCS), Graph Algorithms: Minimum spanning tree (Algorithm of Kruskal & Prim), Single source shortest paths (Dijkstra's Algorithm), All pairs shortest paths (Floyd-Warshall algorithm).

UNIT-IV

Concept of Backtracking: N Queen Problem, Branch and Bound, Approximation Algorithms: Polynomial Time, Polynomial-Time certification, NP-Completeness, NP Completeness and reducibility, NP-Complete problems: The circuit satisfiability problem, The clique problem, The vertex-cover problem, The subset sum problem, Algorithm for travelling-salesperson problem.

Reference Books:

1. S. Sridhar, *Design and Analysis of Algorithms*, 1st Edition, Oxford, 2015.
2. T.H Cormen C. E. Leiserson, R. L. Rivest, *Introduction to Algorithms*, 3rd Edition, MIT Press, 2009.
3. E.Horwitz S.Sahani, S.Rajasekharn, *Fundamentals of Computer Algorithms*, 2nd Edition, University Press, 2008.
4. Michael T. Goodrich, *Algorithm Design: Foundations, Analysis & Internet examples*, 1st Edition, Wiley, 2001.

COURSE OUTCOMES:

The students will be able to

CO1: Explain different computational models, order notation and various complexity measures.

CO2: Compare the complexities of problem-solving techniques.

CO3: Apply the fundamental graph theory algorithms and to solve related problems.

CO4: Analyze efficient algorithms in common engineering design situations. **CO5:**

Evaluate the criteria and specifications of algorithmic design techniques. **CO6:** Design approximation algorithms.

OMC40106 OBJECT ORIENTED PROGRAMMING CREDITS-3

UNIT - I

OOPS Concept and Introduction to Java: OOP's concept, Programming Paradigm, Basics of Java, Data Types, Variables, Operators, Control Statements, Loops and Arrays.

Classes and Objects: Classes, Methods, Inner Classes, Packages, Strings, Inheritance & Polymorphism, Abstract class, Interfaces, Exception Handling, Java Collections.

UNIT - II

Java I/O: Input Stream, Output Stream, File Stream.

Multithreaded Programming: Multithreading concepts, Thread Life Cycle, Creating Multithreaded Application, Thread priorities, Thread synchronization.

Networking with Java: Networking basics, Sockets, port, java.net – networking classes and interfaces, Implementing TCP/IP based Server and Client, Datagrams – Datagram packet, Datagram server and client.

UNIT-III

Applets: Applet Architecture, Applet Life Cycle, adding images and sound to an applet, passing parameters to an applet, Creating Applet Application, Requesting repainting.

AWT & Event Handling: Layout Managers, Border layout, Flow layout, Grid layout, Card layout, AWT all components, Event delegation Model, Event source and handler, Event categories, Listeners, interfaces, Anonymous classes.

UNIT-IV

Swings: Model view Controller design pattern, Different layout, Menus, Dialog boxes, Text input etc.

Database Connectivity with JDBC: Java database connectivity, Types of JDBC drivers, writing first JDBC applications, Types of statement objects (Statement, Prepared Statement and Callable Statement), Types of Resultset, ResultSetmetadata, Inserting and updating records, JDBC and AWT, Connection pooling.

Reference Books:

1. PatricNaughton, Herbert Schildt, *Java 2 Complete Reference*, 9th Edition, McGraw Hill Education, 2017
2. R. Nageswara Rao, *Core Java: An Integrated Approach*, 1st Edition, Dreamtech Press, 2016
3. Ivor Horton, *Beginning Java*, 7th Edition, Wiley, 2011
4. *Core Java For Beginners*, 3rd Edition, Vikash Publication, 2013
5. Jim Keogh, *Complete Reference- J2EE*, 1st Edition, McGraw Hill Education, 2017

COURSE OUTCOMES:

The students will be able to

CO1: Describe the differences between object-oriented programming and procedural programming.

CO2: Understand the fundamental concepts of object oriented programming.

- CO3:** Apply the advanced concept of object-oriented programming such as inheritance and polymorphism.
- CO4:** Analyze the additional features of JAVA that are not available in function oriented programming languages such as exceptional handling, Interface, etc.
- CO5:** Evaluate the functionalities like Multithreading and Networking with JAVA.
- CO6:** Develop small scale projects using AWT, swings and JDBC.

OMC40108 SOFTWARE ENGINEERING

CREDITS-3

UNIT - I

Introduction to Software Engineering: Emergence of software engineering, changes in software development practices, system engineering and role of system analyst.

Software Life Cycle Models: Need for a life cycle model, phase entry and exit criteria, classical waterfall model, iterative waterfall model, iterative waterfall model, prototype model, evolutionary model, V model, Spiral model, selection criteria for the various models and Agile model development.

Requirement Analysis and Specification: Requirement gathering and analysis, functional requirements, organization of the SRS document, decision trees and decision tables, formal system specification, axiomatic specification, algebraic specification and 4GL.

UNIT – II

Introduction to Design: Importance of design, design activities and methodologies, good design characteristics, cohesion, coupling, layered modular design, fan-in and fan-out, approaches to design.

Function Oriented Design Approach: Structured analysis, data flow diagrams, structured design, transform analysis and transaction analysis, structure chart.

Object Oriented Design with UML: Overview of Object-Oriented Concepts, UML (Unified Modeling Language), UML Diagrams for Users View, Structural View, Behavioral View, Implementation View and Environmental View, Designing Use Case Diagram, Class Diagram, Sequence Diagram and State Charts.

UNIT - III

Coding: Coding standards, code walkthrough, code inspection, documentation – internal and external documentation and Gunning's Fog index.

Testing: Validation and verification, fault and failure, debugging, debugging approaches, unit testing, black box testing, equivalence class partitioning, boundary value analysis, white box testing, integration testing, system testing – alpha, beta and acceptance testing, stress testing and regression testing.

Maintenance: Characteristics of maintenance, types of maintenance, software reverse engineering, maintenance process model and maintenance cost estimation.

UNIT – IV

Software Project Management: Roles of a project manager, project planning, project size estimation, project estimation techniques - empirical, heuristic (COCOMO) and analytical, staffing estimation, scheduling, organization and team structure, risk management and SCM.

Reliability and Quality Management: Introduction to reliability, reliability metrics, reliability growth

modelling, software quality, ISO 9001, SEI CMM and Six Sigma.

Computer Aided Software Engineering: Scope of CASE, benefit of CASE, CASE in software life cycle, second generation CASE tool and CASE environment architecture.

Reference Books:

1. *Rajib Mall: Fundamentals of Software Engineering, 4th Edition, Prentice Hall of India, 2014*
2. *I. Sommerville: Software Engineering 10th Edition, Pearson Education, 2017*
3. *Roger S. Pressman: A Practitioner's Approach, 7th Edition, McGraw Hill Education, 2009*
4. *Craig Larman: Applying UML and Patterns An introduction OOAD and the Unified Process, 3rd Edition, Pearson Education, 2015*

COURSE OUTCOMES:

The students will be able to

CO1: Identify requirements of the software projects.

CO2: Understand the software requirements and translate them to Design and development process.

CO3: Apply and map various testing methods to the phases of SDLC.

CO4: Analyze the basic project management practices and tools in real life projects.

CO5: Evaluate various quality factors for software.

CO6: Develop small real-world project with the help of software engineering concepts.

OMC40112 ARTIFICIAL INTELLIGENCE CREDITS-3

UNIT-I

Introduction: The Foundations of Artificial Intelligence, The History of Artificial Intelligence and the State of the Art.

Agents and Environments: Introduction, Types of agents, Structure of Intelligent Agents and Rational Agents Environments.

UNIT-II

Solving Problems by Searching: Problem-solving Agents, Formulating Problems, Example Problems, and Searching for solutions, Search Strategies, Avoiding Repeated States.

Uninformed Search Strategies: (BFS, DFS, DLS, IDDFS, Bidirectional Search).

Informed Search Methods: Best-First Search, Heuristic Functions, A* search and Iterative Improvement Algorithms.

UNIT-III

Constraint Satisfaction Problems: Constraint Satisfaction Problems; Backtracking search for CSPs; Local search for CSPs.

Adversarial Search: Games, Optimal Decisions in Games, Alpha-Beta pruning.

Agents that Reason Logically: A Knowledge-based Agent, The Wumpus World Environment,

Representation, Reasoning and Logic, Propositional Logic: A very simple logic, an agent for the Wumpus World.

First-Order Logic: Syntax and Semantics, Extensions and Variations, Using First Order Logic, Logical Agents for the Wumpus World.

UNIT-IV

Neural Network: -Learning in Neural and Belief Networks, How the Brain Works, Neural Network Perceptions. Multi-layered feed forward Networks, Back Propagation algorithm, Applications of Neural Networks.

Genetic Algorithms: Introduction, encoding, fitness function, reproduction operators, genetic modelling, genetic operators, crossover, single site crossover. two-point crossover, multi point crossover, uniform crossover.

Planning: A simple planning agent from problem solving to planning, planning in situation calculus. Basic representations for planning. A partial-order planning example, A partial order planning algorithm.

Reference Books:

1. LavikaGoel, *Artificial Intelligence, Concepts and Applications*, Wiley, 1st Edition, 2021
2. S.J. Russell & P. Norvig, *Artificial Intelligence: A modern Approach*, Pearson, 2009.
3. P.H Winston, *Artificial Intelligence*, Addison Wesley, 2011.
4. E Rich & K Knight, *Artificial Intelligence*, McGraw Hill Education; 3rd Edition, 2017.
5. Nils J. Nilsson, *Artificial Intelligence: A new Synthesis* –, 1st Edition, Elsevier, 1997.
6. A. Srinivasaraghavan & V. Joseph, *Machine Learning*, Wiley, 2019. 7.

COURSE OUTCOMES:

The students will be able to

CO1: Describe the key components of the artificial intelligence (AI) field

CO2: Explain search strategies and solve problems by applying a suitable search method

CO3: Apply artificial intelligence techniques, including search heuristics, knowledge representation, planning and reasoning

CO4: Analyse and apply probability theorem, Bayesian networks, knowledge representation.

CO5: Describe and list the key aspects of planning in artificial intelligence

CO6: Design and implement appropriate solutions for search problems and for planning problems

PRACTICALS

OMC49102

JAVA LAB

CREDITS-2

Introduction: An overview of JAVA program, data types, variable and arrays, operators, control statements

Classes& Objects: The general form of a class, declaring objects, assigning object reference variables, methods, constructors.

Inheritance: Inheritance basics, member access and inheritance, using super to call super class constructors. Creating a multilevel hierarchy, method overriding, dynamic method dispatch, using abstract classes, using final with inheritance.

Packages: Defining a package, finding packages and CLASSPATH, access protection, importing packages.

Interfaces: Defining an interface, implementing interfaces, applying interfaces, variables in interfaces, use static methods in an interface.

Exception Handling: Exception-Handling Fundamentals, Exception Types.

I/O Basics: Streams, reading console input, writing console output, reading and writing files.

Multithreaded Programming: The java thread model, creating a thread, creating multiple threads.

Applet: Applet fundamentals, the applet class, applet architecture, applet initialization and termination.

AWT: Introducing the AWT, working with windows, graphics, and text.

JDBC: Introduction to JDBC, Drivers Types, JDBC Objects, SQL query objects.

OMC49104

MACHINE LEARNING LAB

CREDITS-2

Write program in Java or Python or R to implement the assignments

Introduce and implement different Supervised and Unsupervised learning technique

Optimization method implementation like Genetic Algorithm

Computational methods for Data Analysis, Non-linear Optimization, Problem-Solving by Soft Computing Techniques- Fuzzy Logic, Neural Networks

Build an Artificial Neural Network by implementing the Back propagation algorithm and test the same using appropriate data sets for real life applications.

OMC49106

PROFESSIONAL COMMUNICATION LAB

CREDIT-1

UNIT-I

Resume Writing: Resume Basics – Structure, Sections, Formatting, Drafting and Exclusions. Types of resumes – Chronological, Functional and Hybrid. Cover Letters

UNIT-II

Group Discussion: GD basics – Structure, Motive, Seating, Format. GD Role-plays – Positive and Negative roles. Types – Topic based and Case study-based GD Strategies – Introduction, Discussion and

Summarization.

UNIT-III

Interview skills:Types of Interviews- Structured, Unstructured and Semi-structured Interview Strategies – Stress handling, Behavioral interview questions, Convincing skills. Interview preparation –Effective communication skills, Dress – code, Research about the company, Subject knowledge, Cognitive flexibility and adaptability.

Reference Books:

1. Lehman, Dufrene, Sinha , BCOM, Cengage Learning,2009
2. Bovee et al, Business Communication Today, 14th Edition Pearson,2018.

THIRD SEMESTER(AUTUMN)

OMC50101 BIG DATA ANALYTICS CREDITS-3

UNIT-I

Data Representation- Data Objects and Attribute Types: Nominal, Binary, Ordinal, Numeric, Discrete and Continuous, Types of data: Record, Temporal, Spatial Temporal, Graph, Unstructured and Semi structured data, Basic Statistical Descriptions of Data.

UNIT-II

Introduction to Data Analysis: Probability and Random Variables, Correlation, Regression. Data Analysis Pipeline: - Data pre-processing- Attribute values, Attribute transformation, Sampling, Dimensionality reduction: PCA, Eigenfaces, Multidimensional Scaling, Non-linear Methods,

Graph-based Semi-supervised Learning, Representation Learning Feature subset selection, Distance and Similarity calculation.

UNIT-III

Data Mining Techniques for Analysis: -Classification: Decision tree induction, Bayes classification, Rule-based classification, Support Vector Machines, Classification Using Frequent Patterns, k-Nearest-Neighbour, Fuzzy-set approach Classifier, Clustering: K-Means, k- Medoids, Agglomerative versus Divisive Hierarchical Clustering Distance Measures in Algorithmic Methods, Mean-shift Clustering.

UNIT-IV

Visualization: -Traditional Visualization, Multivariate Data Visualization, Principles of Perception, Color, Design, and Evaluation, Text Data Visualization, Network Data Visualization, Temporal Data Visualization.

Reference Books:

1. *Intelligent Data Analysis*, M.Berthold and D.J.Hand, 2nd Edition, Springer, 2007
2. J Moreira , Andre Carvalho , T Horvath, *A General Introduction to Data Analytics*, Wiley, 2019
3. Jiawei Han, MichelineKamber, Jian Pei , *Data Mining Concepts and Techniques*, 3rd Edition, Morgan Kaufmann Publishers, 2011
4. Michael Minelli, Michelle Chambers, and AmbigaDhiraj, "Big Data, Big Analytics: Emerging Business Intelligence and Analytic Trends for Today's Businesses", Wiley, 2013.
5. DT Editorial Services, *Big Data, Black Book*, Dreamtech Press (Wiley), 2015.

COURSE OUTCOMES:

The students will be able to

CO1: Understand the programming requirements viz., generic types and methods to perform data analysis.

CO2: Find a meaningful pattern in data.

CO3: Implement the analytic algorithms.

CO4: Handle large scale analytics projects from various domains.

CO5: Develop intelligent decision support systems.

CO6: Formulate an effective strategy to implement a successful Data analytics project.

OMC51103 INFORMATION AND CYBER SECURITY CREDITS-4

UNIT - I

Introduction: Goals of Information Security (CIA), Security Services, Basic Network Security Terminology, Security Threats and Attacks.

Basic Encryption Techniques: Cryptography, Classical Methods, Substitution Ciphers, Transposition Ciphers, Cryptanalysis, Steganography.

UNIT - II

Modern Block Ciphers: Feistel Ciphers, Data Encryption Standard (DES), DES Analysis, Block Cipher Modes of Operations, Triple DES.

Stream Ciphers: A5/1, RC4.

Public Key Cryptosystems: Public Key Cryptography, RSA, Elliptic Curve Cryptography.

Key Management: Key Distribution, Diffie–Hellman Key Exchange, Digital Signatures, X.509 Digital Certificate Standard.

UNIT - III

Authentication: Message Digest, Secure Hash Algorithm, HMAC, Access Control-Passwords, Biometrics, Authorization- Firewalls, IDS.

Security at Network Layer: Secure Socket Layer (SSL) and Transport Layer Security (TLS), SSL vs IPSec, Kerberos, WEP.

UNIT - IV

Software Flaws and Malware: Types of malware, Software-Based Attacks.

Cyber Security: Cyber Threats: - Cyber Warfare-Cyber Crime-Cyber Terrorism-Cyber Espionage,

Cyberspace and the Law, Penalties & Offences under the Information Technology Act, 2000, Cyber Forensics.

Reference Books:

1. *M. Stamp: Information Security: Principles and Practice, 2nd Edition, Wiley*
2. *V. K. Pachghare: Cryptography and Information Security, 2nd Edition, PHI, 2015*
3. *Michael E. Whitman: Principles of Information Security, 5th Edition, Cengage, 2015*
4. *Forouzan: Cryptography & Network Security, 3rd Edition, McGraw-Hill Education*
5. *William Stallings: Cryptography and Network Security Principles and Practices, 7th Edition, Pearson Education, 2017*
6. *Mark Rhodes-Ousley: Information Security: The Complete Reference, 2nd Edition, McGraw Hill Education, 2013*

COURSE OUTCOMES:

The students will be able to

CO1: Evaluate the security threats in modern computer era.

CO2: Classify the basic principles of symmetric key algorithms and operations of some symmetric key algorithms and asymmetric key cryptography.

CO3: Define and identify firewall and network filtering.

CO4: List and recognize various VPN.

CO5: Identify different Software Flaws and Malwares.

CO6: Distinguish various ethical hacking and testing procedures.

OMC50105

CLOUD COMPUTING

CREDITS-3

UNIT-I

Introduction to Cloud Computing: Cloud Computing in a Nutshell, System Models for Distributed and Cloud Computing, Roots of Cloud Computing, Grid and Cloud, Layers and Types of Clouds, Desired Features of a Cloud, Basic Principles of Cloud Computing, Challenges and Risks, Service Models.

UNIT-II

Virtualization concepts: Virtual Machines and Virtualization of Clusters and Data Centers, Levels of Virtualization, Virtualization Structures / tools and Mechanisms, Virtualization of CPU, Memory and I/O Devices, Virtual Clusters and Resource Management, Virtualization Data-Center Automation.

UNIT-III

Cloud computing architectures over Virtualized Data Centers: Data-Center design and Interconnection networks, Architectural Design of Compute and Storage Clouds, Public Cloud Platforms, Inter-cloud Resource Management. Cloud Security and Trust Management, data Security in the Cloud: An Introduction to the Idea of Data Security, The Current State of Data Security in the cloud.

UNIT-IV

Common Standards in Cloud Computing: The Open Cloud Consortium, the Distributed Management Task Force, Standards for Application Developers, Standards for Messaging. Internet Messaging Access Protocol (IMAP), Standards for Security, Examples of End-User Access to Cloud Computing.

Reference Books:

1. *RajkumarBuyya, James Broberg and Andrzej Goscinski , Cloud Computing Principles and Paradigms, 1st Edition, Wiley Publication, 2011*
2. *Judith Hurwitz, Robin Bloor, Marcia Kaufman and Fern Halper, Cloud Computing for Dummies, Wiley Publication, 2009*
3. *Divyakant Agrawal, K. G. SelcukCandan, Wen-Syan Li (Eds.), New frontiers in information and software as a service, Springer Proceedings, 2011*
4. *K. Jayaswal, Cloud Computing Black Book, Dreamtech Press (Wiley), 2014.*

COURSE OUTCOMES:

The students will be able to

- CO1:** Elaborating the basic concepts of cloud computing and defining the basic terms.
- CO2:** Understanding the various cloud implementations and migration techniques.
- CO3:** To define the various industrial applications of cloud virtualization.
- CO4:** In depth learning of security challenges and preventive measures in cloud computing.
- CO5:** To Illustrate Virtualization for Data-Center Automation.
- CO6:** Practical implementation of cloud computing and live case studies.

ELECTIVE-I

OMC50121OBJECT ORIENTED ANALYSIS AND DESIGN CREDITS-3

UNIT-I

Introduction: Importance of modeling, process model, analysis and design, methodology, UML, views, design models and code.

Object Model: UML and code, classes and objects, data redundancy, links and associations, assemblies and components.

UNIT-II

Business Modeling: Terms, concepts, use-cases, actors, generalization of use-case, extend and include stereotypes, use-case packaging.

Class and Object Diagrams: Static and dynamic models, advanced classes, advanced relationships, generalization, aggregation, composition, reification, link classes, interfaces and packages.

UNIT-III

Interaction Diagrams: Classifier roles, association roles, Sequence diagram, Communication diagram, Interaction Overview diagram, and Timing diagram.

Advanced Behavioural Modeling: States, events and transitions, semantics, non-determinism in a state

chart diagram, actions and activities, composite states and timed event.

UNIT-IV

Component Diagram: Components, artifacts, compilation dependency, generalization dependency and dependency graphs.

Constraints: UML constraints, 'xor' constraint, 'subset' constraints and introduction to OCL.

Reference Books:

1. Mark Priestley, *Practical Object-Oriented Design with UML*, 2nd Edition, McGraw-Hill Education, 2003
2. Larman Craig, *Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and Iterative Development*, 3rd Edition, Pearson, 2015
3. Simon Bennett, [Ray Farmer](#), [Steve McRobb](#), *Object-Oriented Systems Analysis and Design Using UML*, 2nd Edition, McGraw Hill Education, 2010
4. AtulKahate, *Object Oriented Analysis & Design*, McGraw-Hill Education, 2007

COURSE OUTCOMES:

The students will be able to

CO1: Define and differentiate the object-oriented design from procedure-oriented design.

CO2: Understand system requirements to determine the use cases and domain model of the problem domain.

CO3: Apply fundamentals of Class and Object modelling.

CO4: Analyze UML models to show the interaction between various objects and understand the limitations of the interaction diagram.

CO5: Evaluate the states of an objects and the importance of the object life cycle.

CO6: Design and implement real-life case studies.

OMC50123 WEB TECHNOLOGY

CREDITS-3

UNIT – I

HTML Basics: HTML Document, Basic Structure of HTML, Syntax, HTML Tags and Attributes, Types of HTML Tags, Rules of nesting, Basic Tags (HTML Tag, Head Tag, Title Tag, Body Tags).

Page Formatting: Adding a new Paragraph, Adding a line break, Inserting a blank space, changing page background, Div and Span tags

Text Formatting: Html Headings, Formatting elements (Bold text, Important text, Italic text, Emphasized text, Marked text, Small text, Deleted text, Inserted text, Subscript text, Superscript text), Comments, Horizontal Lines

Creating Lists: Ordered List, Unordered Lists, Definition Lists

Advance HTML: Images, Text Links, Image Links, opening a page in New Window or Tab, Linking to an area of same page, Introduction to Table Tags, Advantages and limitations of tables, Frames & IFrame, HTML Forms, XHTML.

UNIT – II

Cascading Style Sheets (CSS): Introduction, Benefits of CSS, CSS Syntax, CSS Implementation (inline, internal and external), CSS Selectors (ID Selectors, Class Selectors, Grouping Selectors, Universal Selectors, CSS Pseudo-classes), CSS properties (background- color, background-image, border-style, height, width, color, text-align, font-family, font-style, font-size, fontweight), Box Model in CSS(margin, border, padding).

UNIT - III

JavaScript: JavaScript Introduction, Language Syntax, Variable declaration, Operators, Control Statements, Error Handling, Understanding arrays, Function Declaration, Built in Functions, HTML Document object Model, Working with Objects, Call method in JavaScript, Inheritance in JavaScript using prototype, cookies.

Server-Side Programming: Java Servlets, Architecture Overview, Servlet- Generating Dynamic Content, Life Cycle, Parameter Data, Sessions, Cookies, URL Rewriting, Other Capabilities-Data Storage and Concurrency,JSP, Architecture of JSP, Life Cycle, Scripting Elements, Implicit Objects, Directive Tags, Action Tags, Custom Tags, JSTL.

UNIT – IV

XML Introduction- Introduction of XML- Some current applications of XML, Features of XML, Anatomy of XML document, The XML Declaration, Element Tags- Nesting and structure, XML text and text formatting element, Table element, Mark-up Element and Attributes, Document Type Definition (DTD), types.

AJAX : Introduction to AJAX , Servlet and JSP with AJAX , Interacting with database

COURSE OUTCOMES:

The students will be able to

CO1:Identify the concepts of the Web &Markup Languages.

CO2: Practice and develop web Applications using HTML, CSS & Frameworks. **CO3:** Distinguish and practice on client-side and server-side Internet Programming. **CO4:** Identify the concepts of JavaScript.

CO5: Working with AJAX, Servlet and JSP.

CO6: Design and implement fully operational websites.

Reference Books:

1. Robert W Sebesta, *Programming the World Wide Web*, 8th Edition, Pearson, 2015.
2. Paul Deitel, Deitel & Associates, Inc., *Internet & World Wide Web: How to Program*, 4th Edition, Pearson, 2008.
3. Marty Hall and Larry Brown, *"Core Web Programming"*, Second Edition, Volume I and II, Pearson Education, 2001.
4. Thomas Powell, Fritz Schneider, *JavaScript The Complete Reference*, 3rd Edition, Mc- Graw Hill.

UNIT - I

Introduction to NLP, NLP tasks in syntax, semantics, and pragmatics. Applications such as information extraction, question answering, and machine translation. The problem of ambiguity. The role of machine learning. Brief history of the field.

UNIT - II

N-gram Language Models: The role of language models. Simple N-gram models. Estimating parameters and smoothing. Evaluating language models, Lexical syntax.

Hidden Markov Models & Tagging: Markov Models, Hidden Markov Models (HMMs), Trellis Algorithm, Viterbi Algorithm. Estimating the Parameters of HMMs, The Forward- Backward Algorithm, Implementation Issues, Task of Tagging, Tag sets, Morphology, Lemmatization, Tagging Methods, Manually Designed Rules and Grammars, Statistical

Methods, HMM Tagging (Supervised, Unsupervised), Evaluation Methodology (examples from tagging), Precision, Recall, Accuracy, Statistical Transformation Rule-Based Tagging, Maximum Entropy, Maximum Entropy Tagging, Feature Based Tagging, Results on Tagging, Various Natural Languages.

UNIT - III

Neural Networks in NLP: Introduction to perceptron and backpropagation, Pattern Recognition and Machine Learning, LSTM Recurrent Neural Networks, Understanding LSTM Networks.

Syntactic parsing and Semantic Analysis: Grammar formalisms and tree banks. Efficient parsing for context-free grammars (CFGs). Statistical parsing and probabilistic CFGs (PCFGs). Lexicalized PCFGs. Neural shift-reduce dependency parsing, Lexical semantics and word-sense disambiguation. Compositional semantics. Semantic Role Labelling and Semantic Parsing.

UNIT - IV

Information Extraction (IE): Named entity recognition and relation extraction. IE using sequence labelling, Machine Translation (MT): Basic issues in MT. Statistical translation, word alignment, phrase-based translation, and synchronous grammars.

Reference Books:

1. Daniel Jurafsky, James H. Martin, *Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics and Speech Recognition*, 2 edition, Pearson, 2013.
2. Steven Bird, Ewan Klein, *Natural Language Processing with Python: Analysing Text with the Natural Language Toolkit*, 1st edition, SPD, 2011.
3. Manning, C. D. and H. Schutze, *Foundations of Statistical Natural Language Processing*, The MIT Press, 1999
4. Allen, J., Benjamin's, *Natural Language Understanding*, Cummings Publishing Company Inc, 1994

COURSE OUTCOMES:

The students will be able to

- CO1:** Demonstrate a given text with basic Language features.
- CO2:** Explain a rule-based system to tackle morphology/syntax of a language.
- CO3:** Distinguish different Models & Tagging.
- CO4:** Design a tag set to be used for statistical processing for real-time applications.
- CO5:** Compare and contrast the use of different statistical approaches for different types of NLP applications.
- CO6:** Design an innovative application using NLP components.

OMC50127 SOFTWARE TESTING AND QUALITY ASSURANCE CREDITS-3

UNIT - I

Fundamentals of testing: Seven testing principles, the psychology of testing, Code of ethics, Verification and Validation, Test Team Organization and Management.

UNIT-II

Test processes: Testing throughout the software life cycle, Software development models, Test levels, Test types, Dynamic Testing, Static techniques, Validation Activities, Regress in Testing, Comparison of Testing Techniques, Maintenance testing.

UNIT-III

Test management: Software Metrics, Testing Metrics for Monitoring Controlling the Testing Process, Efficient Test Suite Management, Acceptance Testing.

UNIT -IV

Testing Software and tools: Testing Object-oriented Software, Testing Web-based Systems, Testing Agile-based Software, Tool support for testing, Test **automation**. Effective use of tools.

Test Quality: Software Quality, Testing Process Maturity Models, **Tracking the Bug**, Case Studies.

Reference Books:

1. Naresh Chauhan: *Software Testing Principles and Practices*, Second Edition, Oxford University Press, 2016
2. Rex Black, Erik van Veenendaal, Dorothy Graham: *Foundations of Software Testing, ISTQB Certification*, Third Edition, Cengage Learning, 2015
3. RenuRajani, Pradeep Oak: *Software Testing, Effective Methods, Tools and Techniques*, Second Edition, Mc Graw Hill, 2017
4. S. S Limaye: *Software Testing*, First Edition, McGraw Hill, 2009

COURSE OUTCOMES:

The students will be able to

- CO1:** Solve the problems using Software Testing techniques and Approaches.
- CO2:** Apply various Software testing Techniques to find bugs in software.
- CO3:** Use open-source software Testing Tools.
- CO4:** Apply various Software Quality Assurance Techniques to ensure the quality in software.
- CO5:** Comparison of different testing tools with suitable cases.
- CO6:** Develop and deliver quality software with Software Reliability, and Software Quality Assurance

UNIT-I

An Overview: Introduction of Management Support Systems, Business Intelligence, Analytics and Decision support, Foundations and Technology for Decision Making, Descriptive Analytics.

UNIT-II

Descriptive Analytics: Data Warehousing, Business Reporting, Visual Analytics, Business Performance Management, Geographic Information systems.

UNIT-III

Predictive Analytics: Data Mining, Techniques for Predictive Modelling, Text Analytics, Text Mining and Sentiment Analysis, Web Analytics, Web Mining and Social Analytics.

UNIT-IV

Prescriptive Analytics: Model-Based Decision Making, Modelling and Analysis, Automated Decision Systems and Expert Systems, knowledge management and Collaborative Systems.

Big Data and Future Direction of Business Analytics: Big Data and Analytics, Business Analytics, Impact of Management Support Systems.

Reference Books:

1. Ramesh Sharda, DursunDelen, EfraimTurban: *Business Intelligence and Analytics: Systems for Decision Support*, Tenth Edition, Pearson education, 2018
2. Efraim Turban, Jay E. Aronson, Ting-Peng Liang: *Decision Support Systems and Intelligent Systems*, 7th Edition, Pearson, 2005
3. Efram G Mallach: *Decision Support systems and Data warehouse Systems*, Second Edition, McGraw Hill, 2002
4. Gregory S. Parnell, Patrick J. Driscoll, Dale L. Henderson: *Decision Making in Systems Engineering and Management*, 2nd Edition, Willy, 2010
5. [Ciara Heavin](#), [Daniel J. Powe](#): *Decision Support, Analytics, and Business Intelligence, Business Expert*, Third Edition, 2017

COURSE OUTCOMES:

The students will be able to

CO1: Identify the guidelines for designing a management support system and phases of the decision making process in a typical organization and the types of decisions that are made.

CO2: Understand the decision support system.

CO3: Apply geographic information system to design infrastructure solutions for organizations. **CO4:** Analyze how enterprise systems and industrial networks create new efficiencies for businesses and evaluate the benefits and limitations of enterprise systems and industrial networks.

CO5: Evaluate decision support tools that can aid decision making and apply system development methodology to develop a decision support system.

CO6: Develop a functional prototype of a decision support system for a given case.

OMC50131 MOBILE APPLICATIONS DEVELOPMENT CREDITS-3

UNIT-I

Introduction to Mobile Computing: Introduction to Android Development Environment, Factors in Developing Mobile Applications: Mobile Software Engineering, Frameworks and Tools, Generic UI Development, Android User.

UNIT-II

Intents on UIs, VUIs and Mobile Apps: Text-to-Speech Techniques, Designing the Right UI, Multi-channel and Multimodal UIs and Services, Android Intents and Services, Characteristics of Mobile Applications, Successful Mobile Development, Storing and Retrieving Data, Synchronization and Replication of Mobile Data, Getting the Model Right, Android Storing and Retrieving Data, Working with a Content Provider.

UNIT-III

Communications Via Network and the Web: State Machine, Correct Communications Model, Android Networking and Web, Telephony, Deciding Scope of an App, Wireless Connectivity and Mobile Apps, Android Telephony, Notifications and Alarms, Performance, Performance and Memory Management, Android Notifications and Alarms.

UNIT - IV

Graphics, Performance and Multithreading: Graphics and UI Performance, Android Graphics and Multimedia, Mobile Agents and Peer-to-Peer Architecture, Android Multimedia, Location, Mobility and Location Based Services, Android Putting It All Together (as time allows), Packaging and Deploying, Performance Best Practices, Android Field Service App, Security and Hacking (as time allows) , Active Transactions, More on Security, Hacking Android, Platforms and Additional Issues (as time allows), Development Process, Architecture, Design, Technology Selection, Mobile App Development Hurdles, Testing.

Reference Books:

1. John Horton, *Android Programming for Beginners, 2nd Edition*, Packt Publishing, 2018
2. Jeff Mcherter and Scott Gowell, *Professional Mobile Application Development*, Jeff Mcherter and Scott Gowell, Wrox (Wiley), 2012
3. Lorn Potter, *Hands-On Mobile and Embedded Development with Qt 5 Build apps for Android, iOS, and Raspberry Pi with C++ and Qt.*, Packt Publishing, 2019
4. PrajyotMainkar, Salvatore Giordano, *Google Flutter Mobile Development Quick Start*, Packt Publishing, 2019

COURSE OUTCOMES:

The students will be able to

CO1: Identify the limitations of fixed networks.

CO2: Understand the network infrastructure requirements to support mobile devices and users.

CO3: Relate the different wireless technologies such as CDMA, GSM, GPRS, LTE, etc.

CO4: Compare the protocols and architectures employed in wireless local area networks and cellular networks.

CO5: Evaluate the techniques to design and develop a simple mobile application for smaller devices.
CO6: Design solutions using mobile computing techniques.

ELECTIVE-II

OMC50141 SOFTWARE PROJECT MANAGEMENT CREDITS-3

UNIT - I

Introduction: Project Management concepts, Process Framework, Project Planning Software Life Cycle, Software Development Process and models - SEI CMM, ISO.

Project evaluation and Programme Management: Importance of Software Project Management, Categorization of Software Projects, Management Control, Project Portfolio Management, Cost-benefit Evaluation, Risk evaluation, Stepwise Project Planning.

UNIT - II

Project Life Cycle and Software Effort Estimation: Software process and Process Models, Selection of methodologies and technologies, Managing interactive processes, Basics of Software estimation, Software effort and Cost estimation techniques, Function points Mark II, COSMIC full function points COCOMO – a Parametric Productivity Model.

UNIT - III

Activity Planning and Risk Management: Objectives of activity planning, Network planning model; Activity-on-arrow network, Precedence network, Forward and Backward pass; Critical path; Slack and float, Resource Allocation – Creation of critical paths – Cost schedules, The SEI CMM - Problems and Risks, Risk Managing framework, Risk Identification, Avoidance, Mitigation and Analysis, Monte Carlo simulation, Risk Estimation.

UNIT - IV

Project Management and Control: Framework for Monitoring and control, Collecting the data, Visualizing progress, Cost monitoring, earned value analysis, prioritizing monitoring Getting the project back to target, Change control, Software Configuration Management.

Staffing in Software Projects and Software Quality: Managing people: Organizational behaviour – Best methods of staff selection, Motivation – The Oldham – Hackman job characteristic model – Stress – Health and Safety – Ethical and Professional concerns, Working in teams, The importance of software quality, ISO 9126, Product versus process quality management, Process capability models, Quality plans.

Reference Books:

1. Bob Hughes, Mike Cotterell, Rajib Mall: *Software project Management*, Sixth Edition, Mc Graw Hill, 2017.
2. Subramanian Chandramouli, Saikat Dutt: *Software Project Management*, First Edition, Pearson Education, 2015.
3. Pankaj Jalote: *Software project Management in Practice*, First Edition, Pearson Education, 2015.
4. Sanjay Mohapatra: *Software project Management*, First Edition, Cengage India, 2011.

COURSE OUTCOMES:

The students will be able to

CO1: Familiar with basic concepts of Software design and implementation.

CO2: Understanding of Development lifecycle models, matching lifecycles to projects, Project plans, Work Breakdown Structures.

CO3: Understanding of Estimation and Budgeting

CO4: Analyze the basic concept of Risk management, Change control,

CO5: Understand and apply various software metrics on software quality products and managing conflict and motivating

CO6: Design the Project Recovery, Documentation, Cutover/Migration, Post Project Reviews, Closing and project success.

OMC50143 COMPUTER GRAPHICS CREDITS-3

UNIT-I

Introduction to Computer Graphics: Image Processing and their applications, Raster-Scan System, Random-Scan Systems. Graphics Primitives: Points and Lines, Line-Drawing Algorithms: DDA and Bresenham's Line Algorithm. Circle-Generating Algorithms: Midpoint Circle Algorithm, Bresenham's Circle Algorithm. Ellipse-Generating Algorithm: Midpoint Ellipse Algorithm. Region Filling Algorithms: Seed Fill: Boundary-Fill Algorithm, Flood-fill Algorithm, Scan-Line Polygon Fill Algorithm.

UNIT-II

Two-Dimensional Geometric Transformations: Translation, Rotation, Scaling, Matrix Representations and Homogeneous Coordinates, Composite Transformations, Inverse transformations, General Pivot-Point Rotation, General Fixed-Point Scaling, General Composite Transformations. Other Transformations: Reflection, Shear.

Two-Dimensional Viewing and Clipping: The Viewing Pipeline, Viewing Coordinate Reference Frame, Window-to viewport Coordinate transformation, Clipping Operations: Point Clipping, Line Clipping: Cohen-Sutherland Line Clipping, Liang-Barsky Line Clipping. Polygon Clipping: Sutherland-Hodgeman Polygon Clipping.

UNIT-III

Three-Dimensional Concepts and Object Representation: Three-Dimensional Transformations: Translation, Rotation, Scaling and their Matrix Representations. Three- Dimensional Display Methods: Parallel Projection, Perspective Projection and their types. Polygon surfaces, quadric surfaces.

Curves and Surfaces: Parametric representation of curves: Bezier curves, B-spline curves. Parametric representation of surfaces; Interpolation method.

Basic Illumination models, polygon rendering methods. Basic Models, Displaying Light Intensities, halftone patterns and Dithering Techniques. Classification, back-face detection, depth-buffer, scan-line, depth sorting, BSP-tree methods, area subdivision and octree methods. Rendering: Polygon Rendering Methods, Gouraud shading and Phong Shading.

UNIT-IV

Intuitive colour concepts: RGB, YIQ, CMY, HSV and HLS colour model, Colour selection. Design of Animation Sequence, general computer animation functions, Raster Animation, computer animation languages, key frame systems, motion specifications.

Reference Books:

1. D. Hearn, M.P. Baker, *Computer Graphics C Version, 4th Edition*, Pearson Education, 2013
2. Hearn, Baker, *Computer Graphics with OpenGL, 4th Edition*, Pearson Education, 2013
3. Rajesh K. Maurya, *Computer Graphics with Virtual Reality Systems, Wiley; Second edition*, 2014
4. J.D.Foley, V.Dam, S.K.Feiner, J.F.Huges - *Computer Graphics Principles Practice, 2nd Edition*, Pearson Education, 2002
5. D. Rogers, *Mathematical Elements of Computer Graphics, 2nd Edition*, McGraw Hill Education, 2017

COURSE OUTCOMES:

The students will be able to

CO1: Explain the core concepts of computer graphics.

CO2: Understand a typical graphics pipeline.

CO3: Apply various algorithms to scan convert the basic geometrical primitives, transformations, area filling, clipping.

CO4: Analyze the importance of viewing and projections in both 2D and 3D.

CO5: Evaluate the various factors of color and shading.

CO6: Design animations using related technologies.

OMC50145 SOFT COMPUTING CREDITS-3

UNIT - I

Fuzzy logic: Fuzzy set theory: crisp sets, fuzzy sets, crisp relations, fuzzy relations, Fuzzy Systems: Crisp logic predicate logic, fuzzy logic, Basic operations on fuzzy sets, Properties of fuzzy sets, Fuzzy relations, fuzzy If – Then rules, fuzzy Rule based system, Defuzzification

UNIT - II

Neural Networks: Supervised Learning Neural Networks, Perceptron, Adaline, Back propagation Multilayer Perceptron, Radial Basis Function Networks, Unsupervised Learning Neural Networks, Competitive Learning Networks, Kohonen Self Organizing Networks, Learning Vector Quantization, Hebbian Learning, Hop-field networks.

UNIT – III

Optimization: Derivative-based Optimization, Descent Methods, The Method of Steepest Descent, Classical Newton's Method, Step Size Determination, Derivative-free Optimization, Genetic Algorithms, Simulated Annealing, Random Search, Downhill Simplex Search

Genetic Algorithms: Fundamentals of genetic algorithms: Encoding, Fitness functions, Reproduction. Genetic Modeling: cross cover, inversion and deletion, Mutation operator, Bit- wise operators, Bitwise

operators used in GA. Convergence of Genetic algorithm.

UNIT - IV

Hybrid Systems: Hybrid system, neural Networks, fuzzy logic and Genetic algorithms hybrids. Genetic Algorithm based Back propagation Networks: GA based weight determination applications: Fuzzy Back Propagation Networks.

Reference Books:

1. S. Rajasekaran, G.A. VijayalakshmiPai, *Neural Networks, Fuzzy Logic and Genetic Algorithms: Synthesis and Applications*, 2nd edition, 2018.
2. S N Sivanandam *Principles Of Soft Computing*, 2nd Edition, John Wiley, 2011.
3. Davis E. Goldberg, *Genetic Algorithms: Search, Optimization and Machine Learning*, Addison Wesley, N.Y., 1989
4. J.S.R.Jang, C.T.Sun and E.Mizutani, *Neuro-Fuzzy and Soft Computing*, PHI/Pearson Education, 2015

COURSE OUTCOMES:

The students will be able to

CO1: Ability to analyze the applications which can use fuzzy logic.

CO2: Design Fuzzy Inference Systems and Fuzzy Controller.

CO3: Understand the difference between learning and programming and explore practical applications of Neural Networks (NN).

CO4: Appreciate the importance of optimizations and its use in computer engineering fields and other domains.

CO5: Understand the efficiency of a hybrid system and how Neural Network and fuzzy logic can be hybridized to form a Neuro-fuzzy network and its various applications.

CO6: Develop models by integrating various soft computing techniques.

OMC50147 MOBILE COMPUTING CREDITS-3

UNIT-I

Introduction to Mobile Communications and Computing: Applications of Mobile Computing, Generations of Mobile Communication Technologies.

(Wireless) Medium Access Control: Motivation for a specialized MAC (Hidden and Exposed terminals, Near and Far terminals), SDMA, FDMA, TDMA, CDMA. Spreading Techniques.

UNIT-II

Cellular Systems: GSM, Mobile services, System architecture, Radio interface, Protocols, Localization and calling, Handover, Security and new data services, General Packet Radio Service (GPRS), EDGE, Universal Mobile Telecommunication System (UMTS). Next Generation Networks – Orthogonal Frequency Division Multiplexing (OFDM), LTE – Architecture & Interface – LTE radio planning, 5G Architecture, MIMO Satellite Communications Systems.

UNIT-III

Wireless LAN: IEEE 802.11 - Architecture – Services – MAC – Physical layer – IEEE 802.11a - 802.11b/g/n - 802.11AC/AD/AX standards – HIPERLAN – Bluetooth, ZigBee, RFID.

Mobile Network Layer: Mobile IP -Goals, assumptions, Entities and terminology, IP packet delivery, Agent Advertisement and Discovery, Registration, Tunnelling and Encapsulation.

Mobile Ad hoc Networks (MANETs): Properties of a MANET, Routing and various routing algorithms, Dynamic Source Routing (DSR), Vehicular Ad Hoc networks (VANET) – MANET Vs VANET.

UNIT-IV

Mobile Transport Layer: Traditional TCP, Indirect TCP, Snooping TCP, Mobile TCP, Fast retransmit/fast recovery, Transmission /time-out freezing, Selective Retransmission, Transaction oriented TCP.

Protocols and Tools: Wireless Application Protocol-WAP Architecture, Mobile Device Operating Systems: iOS, Android, BlackBerry, Security.

Reference Books:

1. Jochen Schiller, *Mobile Communications*, Pearson Education; Second edition, 2014
2. UpenaDalal, *Wireless communication & networks*, Oxford University Press, 2014
3. Kumkum Garg, *Mobile Computing*, Pearson Education India, 2010
4. GottapuSasibhushana Rao, *Cellular Mobile Communication*, Pearson Education India, 2012
5. Reza Behravanfar, *Mobile Computing Principles: Designing and Developing Mobile Applications with UML and XML*, Cambridge University Press, 2004
6. Uwe Hansmann, LotharMerk, Martin S, Nicklous, Thomas Stober, *Principles of Mobile Computing*, 2nd Edition, Springer, 2006

COURSE OUTCOMES:

The students will be able to

CO1: Identify the limitations of fixed networks.

CO2: Understand the network infrastructure requirements to support mobile devices and users.

CO3: Relate the different wireless technologies such as CDMA, GSM, GPRS, LTE, etc.

CO4: Compare the protocols and architectures employed in wireless local area networks and cellular networks.

CO5: Evaluate the techniques to design and develop a simple mobile application for smaller devices.

CO6: Design solutions using mobile computing techniques.

UNIT-I

Introduction to Blockchain:Blockchain History, Digital Trust, Decentralization- Digital Money to Distributed Ledger Technology, Decentralized Economy, Design Primitives: Protocols, Security, Consensus.

Types of Blockchain- Permissions Vs Permission-less Blockchain and Privacy, Cryptography and Crypto PrimitivesHash-Signature-PKI, Cryptocurrency and its requirements.Bitcoin/Ethereum Basics, Double Spending, Wallet.

UNIT-II

Consensus: Overview of Blockchain Technology, Lifecycle of Blockchain- Transactions, Blocks, Hashes, Digital Signature, Consensus, Verify and confirm Blocks/Transactions, Smart Contract, Consensus Mechanisms- Proof of Work, Proof of Stake, Proof of Burn, Proof of Authority and Proof of Elapsed Time, Role of the Miners, Requirements for the Consensus Protocols, Scalability aspects of Blockchain.

UNIT-III

Blockchain Architecture:Markle Root Tree, Blockchain Platform, Mining and simulating Blockchain, Competitive Mining, Incentives- mining and transaction fee, CPU and Energy Considerations,

Features of Hyperledger, Hyperledger Model: Decomposing the consensus process, Hyperledger components, IOTA, EOS, Multichain, Corda and Solidity.

UNIT-IV

Blockchain Use Cases: – Design and Implementation of a Distributed Application (DAPP), Auto execution of contracts.

Blockchain in Finance: Settlements, KYC, Capital Markets and Insurance, Blockchain in trade/supply-chain: Provenance of goods, visibility, Invoice Management, Blockchain in Government: Digital Identity, Land Records, Public Distribution System and Social Welfare Systems, Blockchain Security, AI-Blockchain-and-Big Data.

Reference Books:

1. Imran Bashir, *Mastering Blockchain*, 2nd Edition, Packt Publishing, 2018.
2. Paul Laurence, *Blockchain: Step-By- Step Guide to Understanding and Implementing Blockchain Technology*, 2018.
3. Melanie Swan, *Blockchain – Blueprint for a new Economy*, O'Reilly, 2018.
4. Alan Wright, *Blockchain: Uncovering Blockchain Technology, Cryptocurrencies, Bitcoin and the Future of Money: Blockchain and Cryptocurrency Exposed*, 2017.
5. A. Antonopoulos, *Mastering Bitcoin: Unlocking Digital Cryptocurrencies*, O'Reilly
6. Kevin Werbach, *The Blockchain and the new architecture of Trust*, MIT Press, 2018.
7. Joseph J. Bambara and Paul R. Allen, *Blockchain – A practical guide to developing business, law, and technology solutions*, McGraw Hill, 2018.
8. Arjuna Sky Kok, *Hands-On Blockchain for Python Developers: Gain blockchain programming skills to build decentralized applications using Python*, Pockt, 2019

COURSE OUTCOMES:

The students will be able to

CO1:Familiarized with Blockchain Terminology. **CO2:**

Understand the concept of Blockchain, Bitcoin. **CO3:**

Understand de-centralization.

CO4:Gain knowledge about the domain of blockchain in real time.

CO5: Basic knowledge of Bitcoin, Ethereum and Hyperledger fabric.

CO6: Design and Implementation of case study based Distributed Applications.

OMC50151

COMPILER DESIGN

CREDITS-3

UNIT - I

Introduction to Compilers: Structure of a compiler, Lexical Analysis, Role of Lexical Analyzer, Input Buffering, Specification of Tokens, Recognition of Tokens, Lex, Finite Automata, Regular Expressions to Automata, Minimizing DFA.

UNIT - II

Syntax Analysis: Role of Parser, Grammars, Error Handling, Context-free grammars, Writing a grammar, Top Down Parsing, General Strategies Recursive Descent Parser Predictive Parser- LL(1), Parser-Shift Reduce Parser, LR Parser, LR (0), Item Construction of SLR Parsing Table, Introduction to LALR Parser, Error Handling and Recovery in Syntax Analyzer, YACC.

UNIT - III

Intermediate Code Generation: Syntax Directed Definitions, Evaluation Orders for Syntax Directed Definitions, Intermediate Languages: Syntax Tree, Three Address Code, Types and Declarations, Translation of Expressions, Type Checking.

UNIT - IV

Run-Time Environment and Code Generation: Storage Organization, Stack Allocation Space, Access to Non-local Data on the Stack, Heap Management, Issues in Code Generation, Design of a simple Code Generator.

Code Optimization: Principal Sources of Optimization, Peep-hole optimization, DAG- Optimization of Basic Blocks, Global Data Flow Analysis, Efficient Data Flow Algorithm.

Reference Books:

1. Alfred Aho, Jeffrey O. Ullman, "Compilers: Principles Techniques and Tool", 2nd Edition, Pearson, 2013.
2. K. C. Loudon, "Compiler Construction- Principles and Practice", Thomson, 2003.
3. V. Raghavan, Principles of Compiler Design, Mc-Graw Hill, 2010.
4. Allen I. Holub "Compiler Design in C", Prentice Hall of India, 2006.
5. C. N. Fischer and R. J. LeBlanc, "Crafting a compiler with C", 2nd Edition Benjamin Cummings, 2008.
6. J.P. Bennet, "Introduction to Compiler Techniques", 2nd Edition, McGraw-Hill, 2003.

COURSE OUTCOMES:

The students will be able to

CO1: Understanding of how the different phases of compiler work.

CO2: Study of lexical analysis, and various parsing techniques.

CO3: Understand the concept of intermediate code generation technique.

CO4: Analyze code optimization technique and fundamental of runtime environment.

CO5: Illustrate the concept of storage management.

CO6: Design and implement a simple compiler for a hypothetical machine using syntax directed translator.

PRACTICALS

OMC59101 DATA ANALYTICS LAB CREDITS-2

Data Analysis and visualization using different tools, statistical analytics, Solving of use cases based on classification, clustering and regression analysis.

OMC59103 ADVANCE JAVA LAB CREDITS-2

Introducing Swing: JFC, Classes of the javax.swing Package

Networking: Network Programming using the java.net Package, Establishing the two-way Communication between Server and Client, Learning the Datagram Socket and Datagram Packet Classes, Understanding the Content and Protocol Handlers

RMI: Understanding RMI Architecture, RMI Registry, Creating a Distributed Application using RMI API, Using Naming Services.

Introducing the Java EE Platform: Introducing the Java EE 6 Platform, HTTP Protocol, Introducing Web and Application Servers.

Servlet: Exploring the Servlet API, Explaining the Servlet Life Cycle methods. Servlet Configuration. Creating a Sample Servlet. Creating application with HttpServletRequest and HttpServletResponse Interfaces, Describing a Session, Working with Session Tracking and exploring the Session Tracking Mechanisms, Using the Java Servlet API for Session Tracking.

JSP: The life cycle methods of a JSP Page, Working with JSP Basic Tags and Implicit Objects, Working with Action Tags in JSP, Exploring the JSP Unified EL, Using Functions with EL, JSP Tag Extensions and Standard Tag Library, Introducing JSTL.

Struts 2: Basics of Struts2, Struts2 Features, Steps to create Struts2 application

Hibernate: Introducing Hibernate, Exploring the Architecture of Hibernate, Steps to create Hibernate application.

KIIT, DEEMED TO BE UNIVERSITY

Declared u/s 3 of UGC Act, 1956

Bhubaneswar, Odisha, India

