



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**  
**KAKINADA – 533 003, Andhra Pradesh, India**

**MASTER OF BUSINESS ADMINISTRATION (MBA)**  
**COURSE STRUCTURE & SYLLABUS**  
*(Applicable for batches admitted from 2019-2020)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA**



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**  
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<b>I YEAR I SEMESTER</b>							
<b>S.No</b>	<b>Course Code</b>	<b>Courses</b>	<b>Marks</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1	C-101	Management and Organizational Behavior	100	4	0	0	4
2	C-102	Managerial Economics	100	4	0	0	4
3	C-103	Accounting for Managers	100	4	0	0	4
4	C-104	Quantitative Analysis for Business Decisions	100	4	0	0	4
5	C-105	Legal and Business Environment	100	4	0	0	4
6	C-106	Business Communication and Soft skills	100	2	0	2	4
7	C-107 Open Elective	Cross Cultural Management Rural Innovation projects MOOCs : SWAYAM/NPTEL- Related to Management Courses other than listed courses in the syllabus	100	4	0	0	4
8	C-108	Information Technology – Lab1(Spreadsheet and Tally)	50	0	0	2	2
<b>Total</b>			<b>750</b>	<b>28</b>	<b>0</b>	<b>2</b>	<b>30</b>

<b>I YEAR II SEMESTER</b>							
<b>S.No</b>	<b>Course Code</b>	<b>Courses</b>	<b>Marks</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1	C-201	Financial Management	100	4	0	0	4
2	C-202	Human Resource Management	100	4	0	0	4
3	C-203	Marketing Management	100	4	0	0	4
4	C-204	Operations Management	100	4	0	0	4
5	C-205	Business Research Methods	100	4	0	0	4
6	C-206 open elective	Project Management Technology Management Lean Management Database Management System	100	4	0	0	4
7	C-207	IT-lab 2(Programming R )	50	0	0	2	2
<b>Total</b>			<b>650</b>	<b>24</b>	<b>0</b>	<b>2</b>	<b>26</b>



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<b>II YEAR III SEMESTER</b>							
<b>S.No</b>	<b>Course Code</b>	<b>Courses</b>	<b>Marks</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1	C-301	Strategic Management	100	4	0	0	4
2	C -302	Operations Research	100	4	0	0	4
3	E -301	Elective – 1	100	4	0	0	3
4	E-302	Elective – 2	100	4	0	0	3
5	E-303	Elective – 3	100	4	0	0	3
6	E-304	Elective – 4	100	4	0	0	3
7	C-304	Industrial Project based on Summer Internship	150	4	0	0	4
<b>Total</b>			<b>750</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>24</b>

<b>II YEAR IV SEMESTER</b>							
<b>S.No</b>	<b>Course Code</b>	<b>Courses</b>	<b>Marks</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1	C -401	Supply Chain Management and Analytics	100	4	0	0	4
2	C-402	Innovation and Entrepreneurship	100	4	0	0	4
3	E-401	Elective – 5	100	4	0	0	3
4	E-402	Elective – 6	100	4	0	0	3
5	E-403	Elective – 7	100	4	0	0	3
6	E-404	Elective – 8	100	4	0	0	3
7	C-403	Comprehensive Viva- voce	50	0	0	0	2
<b>Total Marks / Credits</b>			<b>650</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>22</b>
			<b>2800</b>				<b>102</b>

\*The project work documentation shall be checked with anti plagiarism software (Turnitin). The permissible similarity shall be less than 30%.

\*Comprehensive Viva is to verify the student knowledge as a whole from which he was studied during the two year course work.

**III SEMESTER**  
**Human Resource Management**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
1	EH-301	Leadership and Change Management
2	EH-302	Performance Evaluation and Compensation Management
3	EH-303	Human Resource Metrics and Analytics
4	EH-304	Human Capital Management
5	EH-305	Manpower Planning, Recruitment, and Selection

**IV SEMESTER**  
**Human Resource Management**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
6	EH-401	Labor Welfare and employment laws
7	EH-402	International HRM
8	EH-403	Employee Relations and Engagement
9	EH-404	Human Resources Development
10	EH-405	Strategic HRM

**III SEMESTER**  
**FINANCE**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
1	EF-301	Investment Analysis and Portfolio Management
2	EF-302	Managing Banks and Financial Institutions
3	EF-303	Financial Markets and Services
4	EF-304	Mergers, Acquisitions and Corporate Restructuring
5	EF-305	Taxation

**IV SEMESTER**  
**FINANCE**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
6	EF-401	Financial Derivatives
7	EF-402	Global Financial Management
8	EF-403	Financial Risk Management
9	EF-404	Strategic Financial Management
10	EF-405	Behavioral Finance

### **III SEMESTER MARKETING**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>1</b>	EM-301	Consumer Behavior
<b>2</b>	EM-302	Retail Management
<b>3</b>	EM-303	Customer Relationship Management
<b>4</b>	EM-304	Strategic Marketing Management
<b>5</b>	EM-305	Digital and Social Media Marketing

### **IV SEMESTER MARKETING**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	EM-401	Services Marketing
<b>7</b>	EM-402	Promotional and Distribution Management
<b>8</b>	EM-403	Green Marketing
<b>9</b>	EM-404	Advertising and Brand Management
<b>10</b>	EM-405	Global Marketing Management

### **III SEMESTER SYSTEMS**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>1</b>	ES-301	Data Mining for Business Decisions
<b>2</b>	ES-302	Managing Software Projects
<b>3</b>	ES-303	Web Designing
<b>4</b>	ES-304	Business Analytics
<b>5</b>	ES-305	Managing Digital Innovation and Transformation

### **IV SEMESTER SYSTEMS**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	ES-401	Big Data Analytics
<b>7</b>	ES-402	Enterprise Resource Planning
<b>8</b>	ES-403	Cyber Laws & Security
<b>9</b>	ES-404	Information Systems Audit
<b>10</b>	ES-405	Artificial Intelligence and Machine Learning

# OPERATIONS MANAGEMENT

## III SEMESTER

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>1</b>	EO-301	Service Operations Management
<b>2</b>	EO-302	Quality Toolkit for Managers
<b>3</b>	EO-303	Pricing and Revenue Management
<b>4</b>	EO-304	Operations Strategy
<b>5</b>	EO-305	Sales and Operations Planning

## IV SEMESTER

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	EO-401	Behavioral Operations Management
<b>7</b>	EO-402	Theory of Constraints
<b>8</b>	EO-403	Management of Manufacturing Systems
<b>9</b>	EO-404	Sourcing Management
<b>10</b>	EO-405	Supply Chain Analytics

# **TRAVEL AND TOURISM MANAGEMENT**

## **III SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>1</b>	ET-301	Travel agency and Tour Operations
<b>2</b>	ET-302	Hospitality Management
<b>3</b>	ET-303	Resort Planning and Destination Management
<b>4</b>	ET-304	Tourism Policy and Planning
<b>5</b>	ET-305	Recreation Management

## **IV SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	ET-401	Travel Media and Journalism
<b>7</b>	ET-402	Event Management
<b>8</b>	ET-403	Front Office Management
<b>9</b>	ET-404	Information Technology and Tourism
<b>10</b>	ET-405	Eco Tourism Practices

# HEALTH CARE AND HOSPITAL MANAGEMENT

## III SEMESTER

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>1</b>	EHC-301	Hospital organization and Management
<b>2</b>	EHC-302	Health Care Policies and Delivery Systems
<b>3</b>	EHC-303	Health Economics
<b>4</b>	EHC-304	Hospital Functions and Support Services
<b>5</b>	EHC-305	Revenue Cycle Management

## IV SEMESTER

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	EHC-401	Patient Care & Services Management
<b>7</b>	EHC-402	Managed Health Care and Insurance
<b>8</b>	EHC-403	Health Laws, Ethics and Regulations
<b>9</b>	EHC-404	Hospital Management Information System
<b>10</b>	EHC-405	Health Analytics



# ENTREPRENEURSHIP AND SMALL ENTERPRISE MANAGEMENT

## III SEMESTER

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>1</b>	EE-301	Indian Models in Entrepreneurship
<b>2</b>	EE-302	Social Entrepreneurship
<b>3</b>	EE-303	Business Plan Preparation for Small Business
<b>4</b>	EE-304	Entrepreneurial Marketing
<b>5</b>	EE-305	Planning, Structuring, and Financing Small Business

## IV SEMESTER

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	EE-401	Marketing for Small Business
<b>7</b>	EE-402	Finance and Accounting for Small Business
<b>8</b>	EE-403	Technology Appreciation and Intellectual Property Rights
<b>9</b>	EE-404	Innovation Technology Management
<b>10</b>	EE-405	Venture Valuation and Accounting

## **AGRO-BUSINESS MANAGEMENT**

### **III SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>1</b>	EA-301	Agro-Marketing Management
<b>2</b>	EA-302	Agro-Business and Rural Green Market
<b>3</b>	EA-303	Agro-Business Environment
<b>4</b>	EA-304	Agro-Supply Chain Management
<b>5</b>	EA-305	Entrepreneurship for Agriculture

### **IV SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	EA-401	Food Processing Management
<b>7</b>	EA-402	Disaster Management
<b>8</b>	EA-403	Food Retail Management
<b>9</b>	EA-404	Agro- Technology Management
<b>10</b>	EA-405	Organic Food Technology

# LOGISTICS AND SUPPLY CHAIN MANAGEMENT

## III SEMESTER

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>1</b>	EL-301	Store keeping and Warehousing management
<b>2</b>	EL-302	Transportation and Infrastructure Management for SCM
<b>3</b>	EL-303	Purchasing and Material Management
<b>4</b>	EL-304	Reverse Logistics
<b>5</b>	EL-305	Supply Chain Risk Management

## IV SEMESTER

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	EL-401	Enterprise Resource Planning
<b>7</b>	EL-402	International Logistics Management
<b>8</b>	EL-403	Lean Supply Chain Management
<b>9</b>	EL-404	Shipping and Maritime law
<b>10</b>	EL-405	Green Supply Chain Management

# **BUSINESS ANALYTICS**

## **III SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>1</b>	EB-301	Essentials of Business Analytics
<b>2</b>	EB-302	Text, Social Media& Web Analytics
<b>3</b>	EB-303	Predictive Analytics
<b>4</b>	EB-304	Big Data Analytics
<b>5</b>	EB-305	Marketing Analytics

## **IV SEMESTER**

<b>S. no</b>	<b>Course Code</b>	<b>SUBJECT TITLE</b>
<b>6</b>	EB-401	Financial Analytics
<b>7</b>	EB-402	HR Analytics
<b>8</b>	EB-403	Econometrics and Business Forecasting
<b>9</b>	EB-404	Data Warehousing and OLAP
<b>10</b>	EB-405	Data Mining& Machine learning

## I YEAR I SEMESTER

C-101	Management and Organizational Behavior	100	4	0	0	4
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### Objective:

Objective of the course is to give a basic perspective of Management. This will form foundation to study other functional areas of management and to provide the students with the conceptual framework and the theories underlying Organizational Behaviour.

### Unit – I

Definition, Nature, Functions and Importance of Management – Evolution of Management thought – Scientific management, administrative management, Hawthorne experiments – systems approach - Levels of Management - Managerial Skills - Planning – Steps in Planning Process – importance and Limitations – Types of Plans - Characteristics of a sound Plan - Management By Objectives (MBO) - Techniques and Processes of Decision Making - Social Responsibilities of Business

### Unit-II

Organizing – Principles of organizing – Organization Structure and Design – Types of power - Delegation of Authority and factors affecting delegation – Span of control – Decentralization – Line and staff structure conflicts - Coordination definition and principles - Emerging Trends in Corporate Structure – Formal and Informal Organization- Nature and importance of Controlling, process of Controlling, Requirements of effective control and controlling techniques.

### Unit – III

Organizational behavior: Nature and scope – Linkages with other social sciences – Individual roles and organizational goals – perspectives of human behavior - Perception– perceptual process – Learning - Learning Process- Theories - Personality and Individual Differences - Determinants of Personality - Values, Attitudes and Beliefs - Creativity and Creative thinking.

### Unit – IV

Motivation and Job Performance – Content and process Theories of Motivation - Leadership - Styles - Approaches – Challenges of leaders in globalized era – Groups – stages formation of groups – Group Dynamics - Collaborative Processes in Work Groups - Johari Window-Transactional Analysis.

### Unit – V:

Organizational conflict-causes and consequences-conflict and Negotiation Team Building, Conflict Resolution in Groups and problem solving Techniques – Organizational change - change process - resistance to change - Creating an Ethical Organization.

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

### References:

1. Harold Koontz, Heinz Weihrich, A.R.Aryasri, Principles of Management, TMH, 2010.
2. Dilip Kumar Battacharya, Principles of Management, Pearson, 2012.
3. Kumar, Rao, Chhaalill “Introduction to Management Science” Cengage Publications, New Delhi
4. V.S.P.Rao, Management Text and Cases, Excel, Second Edition, 2012.
5. K.Anbuvelan, Principles of Management, University Science Press, 2013.
6. K.Aswhathappa “ Organisational Behaviour-Text, Cases and Games”, Himalaya Publishing House, New Delhi, 2008.
7. Steven L Mc Shane, Mary Ann Von Glinow, Radha R Sharma: “Organisational Behaviour”, TMH Education, New Delhi, 2008

<b>C-102</b>	<b>Managerial Economics</b>	<b>100</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>
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**Objective:** This subject seeks to equip the students with the analytical tools of Economics and apply the same to rational managerial decision-making. It further seeks to develop economic way of thinking in dealing with practical business problems and challenge.

**UNIT-I:**

Introduction to Managerial Economics: Nature and Scope- Fundamental Concepts: Incremental reasoning, Concept of Time Perspective, Discounting Principle, Opportunity Cost Principle, Equi -Marginal Concept,-Theory of Firm.

**UNIT-II:**

Demand Analysis and Forecasting: Concepts of Demand, Supply, Determinants of Demand and Supply, Elasticities of Demand and Supply- Methods of demand forecasting for established and new products.

**UNIT-III:**

Cost and Production Analysis: Cost: Concept and types, Cost-Output Relationships, Cost Estimation, Reduction and Control- Economies and Diseconomies of Scale- Law of Variable Proportions- Returns to Scale- Isoquants-Cobb-Douglas and CES Production functions.

**UNIT-IV:**

Theory of Pricing: Price determination under Perfect Competition, Monopoly, Oligopoly and Monopolistic Competitions- Methods of Pricing- Game Theory basics- Dominant Strategy-Nash Equilibrium and Prisoner's Dilemma.

**UNIT-V:**

Macro Economics and Business: Concept, Nature and Measurement of National Income- Inflation and Deflation: Inflation - Meaning and Kinds, Types, Causes and measurement of inflation Measures to Control Inflation, Deflation- - Philips curve- Stagflation-Theory of Employment- Business cycles: Policies to counter Business Cycles.

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

**References:**

1. D.M.Mithani, Managerial Economics, Himalaya Publishing House
2. H.Craig Peterson, W.Cris Lewis, Managerial Economics, Pearson, 2005.
3. Gupta G.S., Managerial Economics, TMH, 1988.
4. P.L. Mehta, Managerial Economics, PHI, 2001.
5. K .K Dawett, Modern Economic Theory, Sultan Chand & Sons.
6. D.N. Dwivedi, Managerial Economics, 7th Ed, Vikas Publishing.
7. Rangarajan and Dholkia, Macroeconomics, TMH.

<b>C-103</b>	<b>Accounting for Managers</b>	<b>100</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>
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**Objective:**

The objective of this course is to acquaint the students regarding various accounting concepts and its application in managerial decision making.

**Unit – I:**

Financial Accounting- concept, Importance and scope, accounting principles, accounting cycle, journal ledger, trial balance, Preparation of final accounts with adjustments.

**Unit – II:**

Analysis and interpretation of financial statements – meaning, importance and techniques, ratio analysis, Fund flow analysis, cash flow analysis.

**Unit – III:**

Cost accounting–meaning, importance, methods, techniques; classification of costs and cost sheet; Inventory valuation methods- LIFO, FIFO, HIFO and weighted average method, an elementary knowledge of activity based costing.

**Unit – IV:**

Management accounting – concept, need, importance and scope; budgetary control-meaning, need, objectives, essentials of budgeting, different types of budgets and their preparation.

**Unit-V:**

Standard costing and variance analysis (materials, labour)-Marginal costing and its application in managerial decision making, Break Even Analysis.

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

**References:**

1. MAHESWARI AND MAHESWARI" Financial Accounting", Vikas Publishing House, New Delhi, 2013.
2. Pandey, I.M. Management Accounting, Vikas Publishing House, New Delhi.
3. Horngen, Sundem & Stratton, Introduction to Management Accounting, Pearson Education, New Delhi.
4. Hansen & Mowen, Cost Management, Thomson Learning.
5. Mittal, S.N. Management Accounting and Financial management, Shree Mahavir Book Depot, New Delhi.
6. Jain S.P. and Narang K.L. Advanced Cost Accounting, Kalyani Publishers Ludhiana.
7. Khan M.Y. and Jain, P.K. Management Accounting, TMH, N. Delhi.

C-104	Quantitative Analysis for Business Decisions	100	4	0	0	4
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### Objective:

Students would be able to acquire an understanding of descriptive statistical tools like measures of central tendency & measures of variation and apply these tools to real life situations.

### Unit I

Basic Mathematical & Statistical Techniques: Linear, Quadratic, Logarithmic and Exponential Functions- Permutations and Combinations – Matrices - Elementary operations of matrices.

### Unit II

Measures of Central Tendency – Measures of Dispersion – Simple Correlation and Regression Analysis  
Concept of Probability- Probability Rules – Joint and Marginal Probability – Baye’s Theorem- Probability Distributions- Binomial, Poisson, Normal and Exponential Probability Distributions.

### UNIT III

Introduction to Decision Theory: Steps involved in Decision Making, different environments in which decisions are made, Criteria for Decision Making, Decision making under uncertainty, Decision making under conditions of Risk-Utility as a decision criterion, Decision trees, Graphic displays of the decision making process, Decision making with an active opponent.

### Unit-IV

Sampling and Sampling Distributions – Estimation – Point and Interval Estimates of Averages and proportions of small and Large Samples – Concepts of Testing Hypothesis – One Sample Test for Testing Mean and Proportion of Large and Small Samples.

### Unit-V

Tests Two Samples – Tests of Difference between Mean and Proportions of Small and Large Samples – Chi-square Test of Independence and Goodness of Fitness- Analysis of Variance.

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

### References:

1. N.D.Vohra: “Quantitative Techniques in Management”, Tata-McGraw Hill Private Limited, New Delhi, 2011.
2. Gupta S.P: “Statistical Methods”, S. Chand and Sons, New Delhi.
3. Anand Sharma: “Quantitative Techniques for Business decision Making”, Himalaya Publishers, New Delhi, 2012.
4. D P Apte: “Operation Research and Quantitative Techniques”, Excel Publication, New Delhi, 2013.
5. Hamdy, A.Taha: “Operations Research: An Introduction”, Prentice-Hall of India, New Delhi 2003.
6. Anderson: “Quantitative Methods for Business”, Cengage Learning, New Delhi 2013.
7. Sancheti, Dc & VK Kapoor, “Business Mathematics”, S Chand and Sons, New Delhi.



C-105	Legal and Business Environment	100	4	0	0	4
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### **Objective:**

To acquaint students with the issues of Indian business environment in which business has to operate, to relate the impact of environment on business in an integrated manner, and to give an exposure to important commercial and industrial laws.

### **UNIT-I**

Introduction: Concept of Business Environment-Definition-Characteristics-Environmental factors, Importance at national and international level – problems and challenges – Environmental Scanning: Importance, Process of scanning- NITI Aayog: It's Role in Economic Development of India- Technological Environment: Features, Its impact on Business, Restraints on Technological Growth.

### **UNIT-II**

Economic and Political Environment: Concept-Definition of Economic Environment-Economic Systems-Relative merits and demerits of each systems-Economic Policies-Monetary-Fiscal- Industrial policies since independence and their significance – regulatory and promotional framework . Structure of Indian Economy-Nature and significance. Economic Planning- Objectives, Merits, Limitations- Concept and Meaning of Political Environment.

### **UNIT-III**

Legal Environment: - Business Law: Meaning, scope and need for Business Law- Source of Business Law- Indian Contract Act 1872: Its Essentials, Breach of Contract and remedies. Intellectual Property Rights. Negotiable Instruments Act 1881.

### **UNIT-IV**

Company Act 2013: Memorandum and alteration of Articles of Association-Partnership Act 1932: Duties of Partners- Dissolution of Partnership-Information Technology Act 2000: Digital signature-Cyber Frauds.

### **UNIT-V**

Miscellaneous Acts: Sales of Goods Act 1930-Sale- agreement to Sale – Implied Conditions and Warranties- Consumer Protection Act 1986- Competition Act- Environment (Protection) Act 1986- Foreign Exchange Management Act (FEMA).

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

- References: 1. Francis Cherunillam, Business Environment, Himalaya Publishers.  
 2. K.Aswathappa, Essentials of Business Environment, Himalaya Publishers.  
 3. P.K.Dhar, Indian Economy Growing Dimensions, Kalyani Publishers 4.  
 4. N.D.Kapoor , Mercantile Law, Sultan Chand Publishers.  
 5. Chaula and Garg, Mercantile Law, Kalyani Publishers

C-106	Business Communication and Soft skills	100	2	0	2	4
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### Objective:

To acquaint the students with fundamentals of communication, help them honing oral, written and non-verbal communication skills and to transform them as effective communicators.

### Unit – I

Purpose and process of communication: Objectives of Communication-Process of Communication- Types of communication; noise, listening skills, Types of listening, essentials of good listening and tips.

**LAB: LISTENING AND SPEAKING SKILLS-** Conversational skills (formal and informal) – group discussion. Listening to lectures, discussions, talk shows, news programmes, dialogues from TV/radio/Ted talk/Podcast – watching videos on interesting events on YouTube.(Presenting before the class).

### Unit – II

**Managing Organizational Communication:** Formal and Informal Communication- Interpersonal and Intrapersonal communication- Role of Emotion in Interpersonal Communication- Barriers to Interpersonal Communication- Exchange Theory-Gateways for Effective Interpersonal Communication.

#### LAB:

Choosing the organization – goal setting - time management — leadership traits – team work – communicating across teams- designing career and life planning.

### Unit – III

**Non verbal communication and Body Language:** Kinesics, Proxemics, Paralanguage, Haptics, handshakes, appropriate body language and mannerisms for interviews: business etiquettes- across different cultures.

**LAB:** Understanding Body Language Aspects and presenting oneself to an interviewer, Proper handshakes.

### Unit – IV

**Written communication:** mechanics of writing, report writing- business correspondence-business letter format- Meetings and managing meetings- Resume writing-Formats and Skills.

**LAB:** Writing job applications – cover letter – resume – emails – letters – memos – reports – blogs – writing for publications.

### Unit- V

**Presentation skills:** prerequisites of effective presentation, format of presentation; Assertiveness –strategies of assertive behavior; Communication skills for group discussion and interviews, Interview Techniques.

**LAB:** Designing presentations and enhancing presentation skills.

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

### References:

- 1.Mallika Nawal: “Business Communication”, Cengage Learning, New Delhi, 2012.
- 2.Edwin A. Gerloff, Jerry C. Wofford, Robert Cummins Organisational Communication: The key stone to managerial effectiveness.
- 3.Meenakshi Rama: “*Business Communication*”, Oxford University Press, NewDelhi
4. C.S.G. Krishnamacharyulu and Dr. Lalitha Ramakrishnan, Business Communication, Himalaya Publishing House, Mumbai
5. Paul Turner: “*Organisational Communication*”, JAICO Publishing House, New Delhi.
6. SathyaSwaroopDebasish, Bhagaban Das” “*Business Communication*”, PHIPrivate Limited, New Delhi, 2009.
7. R.K.Madhukar: “Business Communication”, Vikas Publishing House, New Delhi, 2012.
8. Kelly M Quintanilla, Shawn T.Wahl:“Business and Professional Communication”, SAGE,New Delhi, 2012.
9. Sangita Mehta, NeetyKaushish: “Business Communication”, University Science Press, New Delhi, 2010.
10. Anjali Ghanekar: “Business Communication Skills”, Everest Publishing House, New Delhi,2011

<b>C-107 Open Elective</b>	<b>Cross Cultural Management</b>	<b>100</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>
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**Objective:**

The objective of this course is to enhance the ability of class members to interact effectively with people from cultures other than their own, specifically in the context of international business. The course is aimed at significantly improving the ability of practicing managers to be effective global managers.

**Unit – I**

Introduction – Concept of Culture for a Business Context; Brief wrap up of organizational culture & its dimensions; Cultural Background of business stakeholders [managers, employees, shareholders, suppliers, customers and others] – An Analytical framework.

**Unit – II**

Culture and Global Management – Global Business Scenario and Role of Culture. Framework for Analysis; Elements & Processes of Communication across Cultures; Communication Strategy for/ of an Indian MNC and Foreign MNC & High-Performance Winning Teams and Cultures; Culture Implications for Team Building.

**Unit – III**

Cross Culture – Negotiation & Decision Making – Process of Negotiation and Needed Skills & Knowledge Base – Overview with two illustrations from multicultural contexts [India – Europe/ India – US settings, for instance]; International and Global Business Operations- Strategy Formulation & Implementation; Aligning Strategy, Structure & Culture in an organizational Context.

**Unit – IV**

Global Human Resources Management – Staffing and Training for Global Operations – Expatriate – Developing a Global Management Cadre.. Motivating and Leading; Developing the values and behaviours necessary to build high-performance organization personnel [individuals and teams included] – Retention strategies.

**Unit – V**

Corporate Culture – The Nature of Organizational Cultures Diagnosing the As is Condition; Designing the Strategy for a Culture Change Building; Successful Implementation of Culture Change Phase; Measurement of ongoing Improvement.

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

**References:**

1. Cashby Franklin, Revitalize your corporate culture: PHI, Delhi
2. Deresky Helen, International Management: Managing Across Borders and Cultures, PHI, Delhi
3. Esenn Drlarry, Rchildress John, The Secret of a Winning Culture: PHI, Delhi

<b>C-107 Open Elective</b>	<b>Rural Innovation projects</b>	<b>100</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>
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**Objective:**

To make the students understand various natural resources and their importance in rural development.

**Unit-I**

Definition and meaning of Resources, Types of Rural Resources, Natural and Man-made, Characteristics of Resources, Importance of different resources in Rural Development. Rural Governance and Administration in India- Pre & Post independence- Elements of Indian constitution Constitutional amendment to Panchayati Raj system- Development (Department) Administration in Rural India.

**Unit-II**

Land Resources development experience: Classification of land based on utility, Soils – Structure and importance, Properties of Soil- Physical and Chemical, Soil Conservation- methods and importance. Status of Rural Development in the SAARC countries.

**Unit-III**

Human Resources Dimensions of Rural Development-Quantitative aspects of rural human resource (Gender & Age wide classification, Density, Issue in rural human resources- Scarcity, lack of skill, attitude, and social status). Food security and public distribution system-Rural Financial Sector –Sources of Rural Credit: Institutional and Non Institutional - Service Delivery System in Rural areas, Rural Infrastructural Sector and Millennium Development Goals Housing in Rural Areas.

**Unit-IV**

Approaches of Rural Development in India- institutional, technological, area and target group, participatory, individualistic. Rural Development Policies during different plan periods. Strategies of Rural Development – growth oriented strategy, Welfare strategy, Responsive strategy, Holistic strategy, right-based strategy. PURA Model.

**Unit-V**

Review of Rural Development Programmes in the area of agricultural sector – crop, non- crop, livestock, fishery, forestry. Review of Rural Development Programmes in area of Social Sectors – Health, Sanitation and Education. Project Planning and Management.

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

**References:**

1. Rural Development: Principles, Policies and Management, Katar Singh, Sage Publications India Pvt. Ltd., 2009.
2. Soil & Water Conservation & Watershed Management Hardcover – 2012, Singh PK Mahnot

<b>C-107 Open Elective</b>	<b>MOOCs : SWAYAM/NPTEL- Related to Management Courses other than listed courses in the syllabus</b>	<b>100</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>
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**NOTE: Students opting for SWAYAM should register for 12 weeks course and need to produce the Pass certificate with minimum 40% (Percentage) for receiving the Academic Credits. The actual percentage mentioned on the certificate will be transferred to the marks memo.**

<b>C-108</b>	<b>Information Technology – Lab1 (Spreadsheet and Tally)</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>
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**Objective:**

**To Understand the students basics of the Computers Knowledge with Financial Software Knowledge**

**UNIT- I**

Understanding Formulas: Creating Formulas -AutoSum - Common Formulas – Searching for Formulas

Copying Formulas - Using Relative and Absolute References. Date Formulas: Text Formulas - Case Formulas - Fix Number Fields -Trim Spaces -Substitute Text. Conditional Logic: IF Statement - Nested IF - AND - OR - NOT -IFERROR -SUMIF -AVERAGEIF -COUNTIF & COUNTIFS -SUMIFS –AVERAGEIFS.

Business Statistics: Mean-Median-Mode-Variance-Correlation-Regression-ANOVA.

Data Validation and Analysis: Data Validation - Drop-Down Lists - Removing Duplicates -Text To Columns

Cell Names - Named Ranges - Formulas with Cell Names. PivotTables: Creating PivotTables –

Choosing Fields - PivotTable Layout -Filtering PivotTables -Modifying PivotTable Data –Pivot Charts.

Lookups: VLOOKUP -VLOOKUP Exact Match - HLOOKUP -HLOOKUP Exact Match. Outline, Sort,

Filter, and Subtotal –Group and Ungroup -Sort Data - Sort Multiple Levels -Filter Data –

Advanced Filter – Conditional Sorting and Filtering -Sorting with Custom Lists.

**UNIT - II**

Introduction to Macro: Recording a Macro-Assign a Macro to a Button or Shape -Run a Macro upon Opening a Workbook- How to Inspect and Modify a Macro

**UNIT- III**

Basic of Accounting: Type of Accounts, Rules of Accounting, Principles of concepts and conventions, double entry system, book keeping Mode of Accounting, Financial Statements, Transaction, Recording Transactions.

Getting the functional with Tally, Creation and setting up of company in Tally.

**UNIT- IV**

Accounting Masters in Tally- Features- Configurations- Setting up Account Heads.

**UNIT- V**

Inventory in Tally- Stock – groups – Stock Categories - Godowns / Location Units of Measure - Stock Items -

Creating Inventor y Masters for National Traders

## I YEAR II SEMESTER

C-201	Financial Management	100	4	0	0	4
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### Objective:

The Course is designed for the students to understand the Financial Management concepts and to identify, enrich and fulfill the needs of Financial Markets.

### UNIT- I

**Financial Management:** Concept - Nature and Scope - Evolution of financial Management - The new role in the contemporary scenario – Goals and objectives of financial Management - Firm's mission and objectives - Profit maximization Vs. Wealth maximization – Maximization Vs Satisfying - Major decisions of financial manager.

### UNIT-II

**Financing Decision:** Sources of finance - Concept and financial effects of leverage – EBIT – EPS analysis. Cost of Capital: Weighted Average Cost of Capital– Theories of Capital Structure.

### UNIT -III

**Investment Decision:** Concept and Techniques of Time Value of Money – Nature and Significance of Investment Decision – Estimation of Cash flows – Capital Budgeting Process – Techniques of Investment Appraisal – Discounting and Non Discounting Methods.

### UNIT-IV

**Dividend Decision:** Meaning and Significance – Major forms of dividends – Theories of Dividends – Determinants of Dividend – Dividends Policy and Dividend valuation – Bonus Shares –Stock Splits – Dividend policies of Indian Corporate.

### UNIT-V

**Liquidity Decision:** Meaning - Classification and Significance of Working Capital – Components of Working Capital – Factors determining the Working Capital – Estimating Working Capital requirement – Cash Management Models – Accounts Receivables –Credit Policies – Inventory Management.

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

### References:

1. I.M. Pandey: “**Financial Management**”, Vikas Publishers, New Delhi, 2013.
2. Khan and Jain: Financial Management, Tata McGraw Hill, New Delhi,
3. Prasanna Chandra: “**Financial Management Theory and Practice**”, Tata McGrawHill 2011.
4. P.Vijaya Kumar, M.Madana Mohan, G. Syamala Rao: “**Financial Management**”, Himalaya Publishing House, New Delhi, 2013.
5. Brigham,E.F: “**Financial Management Theory and Practice**”, Cengae Learning, New Delhi, 2013
6. RM Srivastava, Financial Management, Himalaya Publishing house, 4<sup>th</sup> edition.

C-202	Human Resource Management	100	4	0	0	4
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### **Objective:**

To equip the students with basic concepts of Human Resource Management and the various functions of HRM including Industrial Relations in the liberalized, socialism environment.

### **UNIT -I**

HRM: Significance - Definition and Functions – evolution of HRM- Principles - Ethical Aspects of HRM- - HR policies, Strategies to increase firm performance - Role and position of HR department –aligning HR strategy with organizational strategy - HRM –changing , global perspective challenges, environment – cross-cultural problems – emerging trends in HRM.

### **UNIT -II**

Investment perspectives of HRM: HR Planning – Demand and Supply forecasting - Recruitment and Selection- Sources of recruitment - Tests and Interview Techniques - Training and Development – Methods and techniques– Job design , evaluation and Analysis - Management development - HRD concepts.

### **UNIT -III**

Performance Appraisal: Importance – Methods – Traditional and Modern methods – Latest trends in performance appraisal - Career Development and Counseling- Compensation - Concepts and Principles- Influencing Factors- Current Trends in Compensation- Methods of Payments in detail - Incentives rewards compensation mechanisms.

### **UNIT -IV**

Wage and Salary Administration: Concept- Wage Structure- Wage and Salary Policies- Legal Frame Work- Determinants of Payment of Wages- Wage Differentials - Incentive Payment Systems. Welfare management: Nature and concepts – statutory and non-statutory welfare measures.

### **UNIT -V**

Managing Industrial Relations: Trade Unions - Employee Participation Schemes-Collective Bargaining– Grievances and disputes resolution mechanisms – Safety at work – nature and importance – work hazards – safety mechanisms - Managing work place stress.

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

### **References:**

1. K Aswathappa: “Human Resource and Personnel Management”, Tata McGraw Hill, New Delhi, 2013.
2. N.Sambasiva Rao and Dr. Nirmal Kumar: “Human Resource Management and Industrial Relations”, Himalaya Publishing House, Mumbai.
3. Mathis, Jackson, Tripathy: “Human Resource Management: A South-Asian Perspective”, Cengage Learning, New Delhi, 2013.
4. Subba Rao P: “Personnel and Human Resource Management-Text and Cases”, Himalaya Publications, Mumbai, 2013.
5. Madhurima Lall, Sakina Qasim Zaidi: “Human Resource Management”, Excel Books, New Delhi, 2010.



C-203	Marketing Management	100	4	0	0	4
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### Objective:

The Course is designed for the students to understand the Marketing concepts and to identify, enrich and fulfill the needs of customers and markets.

### UNIT -I

**Introduction to Marketing:** Needs - Wants – Demands - Products - Exchange - Transactions - Concept of Market and Marketing and Marketing Mix - Production Concept- Product Concept - Sales and Marketing Concept - Societal Marketing Concept - Green Marketing concept - Indian Marketing Environment.

### UNIT -II

**Market Segmentation, Targeting and Positioning:** Identification of Market Segments - Consumer and Institutional/corporate Clientele - Segmenting Consumer Markets - Segmentation Basis – Evaluation and Selection of Target Markets – Positioning significance - Developing and Communicating a Positioning Strategy.

### UNIT -III

**Product and Pricing Aspects:** Product – Product Mix - Product Life cycle -Obsolescence- Pricing- Objectives of Pricing - Methods of Pricing - Selecting the Final price - Adopting price - Initiating the price cuts - Imitating price increases-Responding to Competitor’s price changes.

### UNIT -IV

**Marketing Communication:** Communication Process – Communication Mix – Integrated Marketing Communication - Managing Advertising Sales Promotion - Public relations and Direct Marketing - Sales force – Determining the Sales Force Size - Sales force Compensation.

### UNIT -V

**Distribution, Marketing Organization and Control:** Channels of Distribution-Intensive, Selective and Exclusive Distribution- Organizing the Marketing Department - Marketing Implementation - Control of Marketing Performance - Annual Plan Control - Profitability Control - Efficiency Control - Strategic Control.

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

### References

1. Phillip Kotler: “**Marketing Management**“, Pearson Publishers, New Delhi, 2013.
2. Rajan Saxena: “**Marketing Management**”, Tata McGraw Hill, New Delhi, 2012.
3. V S Ramaswamy & S Namakumari, Marketing Management Global Perspective Indian Context 4th Edition, Mac Millan Publishers 2009.
4. Tapan K Panda: “**Marketing Management**”, Excel Books, New Delhi, 2012
5. Paul Baines, Chris Fill, Kelly Page Adapted by Sinha K: “**Marketing**”, Oxford University Press, Chennai, 2013

C-204	Operations Management	100	4	0	0	4
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**Objective:**

This Course is designed to make student understand the strategic significance of Operation management, to acquaint them with application of discipline to deal with real life business problem.

**UNIT-I:**

Introduction to Operation Management: Nature & Scope of Operation/ Production Management, Relationship with other functional areas, Recent trend in Operation Management, Manufacturing & Theory of Constraint, Types of Production System, Just in Time (JIT) & lean system.

**UNIT -II:**

Product Design & Process Selection: Stages in Product Design process, Value Analysis, Facility location & Layout: Types, Characteristics, Advantages and Disadvantages, Work measurement, Job design.

**UNIT- III:**

Forecasting & Capacity Planning: Methods of Forecasting, Overview of Operation Planning, Aggregate Production Planning, Production strategies, Capacity Requirement Planning, MRP, Scheduling, Supply Chain Management, Purchase Management, Inventory Management.

**Unit- IV:**

Productivity: Factors, Affecting Productivity – Job Design – Process Flow Charts – Methods Study – Work Measurement – Engineering and Behavioral Approaches.

**UNIT -V:**

Quality Management: Quality- Definition, Dimension, Cost of Quality, Quality Circles-Continuous improvement (Kaizen), ISO (9000&14000 Series), Statistical Quality Control: Variable & Attribute, Process Control, Control Charts -Acceptance Sampling Operating Characteristic Curve (AQL , LTPD, Alpha & Beta risk ), Total Quality Management (TQM).

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

**References:**

1. Krajewski & Ritzman (2004). Operation Management -Strategy and Analysis. Prentice Hall of India.
2. Panner Selvem, Production and Operation Management, Prentice Hall of India.
3. Chunnawals, Production & Operation Management Himalaya, Mumbai
4. Charry, S.N (2005). Production and Operation Management- Concepts, Methods Strategy. John Willy & Sons Asia Pvt Limited.
5. K Aswathappa & Sridhar Bhatt, Production & Operations Management, Himalaya, Mumbai.

C-205	Business Research Methods	100	4	0	0	4
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**Objective:**

Developing the students in Research orientation and to acquaint them with fundamental of research methods.

**UNIT -I**

**Introduction :** Nature and Importance of Research, The role of Business Research, Aims of social research, Types of Research- Pure research vs. Applied research, Qualitative research vs. Quantitative research, Exploratory research, Descriptive research and Experimental research, ethical issues in business research- Defining Research Problem, Steps in Research process.

**UNIT -II**

**Data Base:** Discussion on primary data and secondary data, tools and techniques of collecting data. Methods of collecting data. Sampling design and sampling procedures. Random vs. Non-random sampling techniques, determination of sample size and an appropriate sampling design. Designing of Questionnaire –Measurement and Scaling – Nominal Scale – Ordinal Scale – Interval Scale – Ratio Scale – Guttman Scale – Likert Scale – Schematic Differential Scale.

**UNIT -III**

**Survey Research and data analysis:** Selection of an appropriate survey research design, the nature of field work and Field work management. Media used to communicate with Respondents, Personal Interviews, Telephone interviews, Self-administered Questionnaires- Editing – Coding – Classification of Data – Tables and Graphic Presentation –Preparation and Presentation of Research Report.

**UNIT -IV**

**Statistical Inference:** Formulation of Hypothesis –Tests of Hypothesis - Introduction to Null hypothesis vs. alternative hypothesis, parametric vs. non-parametric tests, procedure for testing of hypothesis, tests of significance for small samples, application, t-test, Chi Square test.

**UNIT -V**

**Multivariate Analysis:** Nature of multivariate analysis, classifying multivariate techniques, analysis of dependence, analysis of interdependence. Bi-Variate analysis-tests of differences-t test for comparing two means and z-test for comparing two proportions and ANOVA for complex experimental designs.

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

**References**

1. C.R. Kothari: Research Methodology, methods and Techniques New Age International Publisher.
2. Navdeep and Guptha : “**Statistical Techniques & Research Methodology**”, Kalyani Publishers
3. Willam G.Zikmund, Adhkari: “**Business Research Methods**”, Cengage Learning, New Delhi, 2013.
4. A.N. Sadhu, Amarjit singh, Research methodology in social sciences, 7<sup>th</sup> Edition Himalaya Publications.
5. A Bhujanga rao , Research methodology, Excel Books, 2008.

<b>C-206 Open Elective</b>	<b>Project Management</b>	<b>100</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>
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**Objective:**

The objective of this course is to enable the students to gain basic knowledge about the concept of project, project management, project life-cycle, project appraisal; to acquaint the students about various issues of project management.

**Unit -I:**

Basics of Project Management –Concept– Project environment – Types of Projects – Project life cycle – Project proposals – Monitoring project progress – Project appraisal and Project selection – Causes of delay in Project commissioning– Remedies to avoid overruns. Identification of Investment opportunities – Sources of new project ideas, preliminary screening of projects – Components for project feasibility studies.

**Unit- II:**

Market feasibility -Market survey – Categories of Market survey – steps involved in conducting market survey – Demand forecasting techniques, sales projections.

**Unit- III:**

Technical and Legal feasibility: Production technology, materials and inputs, plant capacity, site selection, plant layout, Managerial Feasibility Project organization and responsibilities. Legalities – Basic legal provisions. Development of Programme Evaluation & Review Technique (PERT) –Construction of PERT (Project duration and valuation, slack and critical activities, critical path interpretation) – Critical Path Method (CPM)

**Unit- IV:**

Financial feasibility – Capital Expenditure – Criteria and Investment strategies – Capital Investment Appraisal Techniques (Non DCF and DCF) – Risk analysis – Cost and financial feasibility – Cost of project and means of financing — Estimation of cash flows – Estimation of Capital costs and operating costs; Revenue estimation – Income – Determinants – Forecasting income –Operational feasibility - Breakeven point – Economics of working.

**Unit -V:**

Project Implementation and Review: Forms of project organization – project planning – project control – human aspects of project management – prerequisites for successful project implementation – project review – performance evaluation – abandonment analysis.

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

**References:**

1. Prasanna Chandra, “Projects, Planning, Analysis, Selection, Financing, Implementation and Review”, Tata McGraw Hill Company Pvt. Ltd., New Delhi 1998.
2. Gido: Effective Project Management, 2e, Thomson, 2007.
3. Singh M.K, “Project Evaluation and Management”.
4. Vasanth Desai, Project Management, 4th edition, Himalaya Publications 2018.
5. Clifford F. Gray, Erik W. Larson, “Project Management, the Managerial Emphasis”, McGraw Hill, 2000.

<b>C-206 Open Elective</b>	<b>Technology Management</b>	<b>100</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>
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**Objective:**

The course aims at providing an overview of various issues connected with Management of Technology in organizations.

**UNIT-I.**

Evolution of Technology-Effects of New Technology- Technology Innovation- Invention-Innovation-Diffusion- Revolutionary and Evolutionary Innovation- Product and Process Innovation- Strategic Implications of Technology- Technology - Strategy Alliance- -Convergent and Divergent Cycle- The Balanced Approach.

**UNIT-II:**

Technology Assessment- Technology Choice- Technological Leadership and Followership- Technology Acquisition- Technological Forecasting- Exploratory, Intuitive, Extrapolation, Growth Curves, Technology Monitoring- Normative: Relevance Tree, Morphological Analysis, Mission Flow Diagram.

**UNIT-III:**

Diffusion of Technology- Rate of Diffusion; Innovation Time and Innovation Cost- Speed of Diffusion- Technology Indicators- Various Indicators- Organizational Implications of Technology- Relationship between Technical Structure and Organizational Infrastructure- Flexible Manufacturing Management System (FMMS).

**UNIT-IV:**

Financial Aspects in Technology Management- Improving Traditional Cost -Management System- Barriers to the Evaluation of New Technology- Social Issues in Technology Management- Technological Change and Industrial Relations- Technology Assessment and Environmental Impact Analysis.

**UNIT-V:**

Human Aspects in Technology Management- Integration of People and Technology- Organizational and Psychological Factors- Organizational Outcome- Technology Transfer-Technology Management Scenario in India.

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

Suggested Readings:

1. Sharif Nawaz: Management of Technology Transfer & Development, APCFT, Bangalore, 1983.
2. Rohtagi P K, Rohtagi K and Bowonder B: Technological Forecasting, Tata McGraw Hill, New Delhi.
3. Betz Fredrick: Managing Technology, Prentice Hall, New Jersey.
4. Gaynor: Handbook of Technology Management, McGraw Hill.
5. Tarek Khalil: Management of Technology, McGraw Hill International, 2000.

C-206 Open Elective	Lean Management	100	4	0	0	4
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**Objective:**

To understand issues and challenges in implementing and development in lean manufacturing techniques from TPS and its contribution for improving organizational performance.

**Unit- I**

Introduction: Mass production system, Craft Production, Origin of Lean production system , Why Lean production , Lean revolution in Toyota , Systems and systems thinking , Basic image of lean production , Customer focus , Waste Management.

**UNIT- II**

Just In Time: Why JIT , Basic Principles of JIT, JIT system, Kanban, Six Kanban rules, Expanded role of conveyance, Production leveling, Three types of Pull systems, Value stream mapping. JIDOKA, Development of Jidoka concept, Why Jidoka, Poka, Yoke systems, Inspection systems and zone control – Types and use of Poka-Yoke systems, Implementation of Jidoka

**UNIT -III**

Kaizen: Six – Sigma philosophy and Methodologies ,QFD, FMEA Robust Design concepts; SPC, QC circles standardized work in lean system , Standards in the lean system, 5S system.

**UNIT- IV**

Total Productive Maintenance: Why Standardized work, Elements of standardized work, Charts to define standardized work, Kaizen and Standardized work Common layouts.

**UNIT- V**

Hoshin Planning & Lean Culture: Involvement, Activities supporting involvement, Quality circle activity, Kaizen training, Key factors of PKT success, Hoshin Planning System, Four Phases of Hoshin Planning, Why Lean culture – How lean culture feels.

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

**References:**

1. Jeffrey Liker, The Toyota Way: Fourteen Management Principles from the World's Greatest Manufacturer, McGraw Hill, 2004.
2. Debashish Sarkar , Lessons in Lean Management,
3. Dale H., Besterfield , Carol, Besterfield, etal, Total Quality Management (TQM) 5e by Pearson 2018.

<b>C-206 Open Elective</b>	<b>Data Base Management System</b>	<b>100</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>
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**Objective:**

The course is to present an introduction to database management systems, with an emphasis on how to organize, maintain and retrieve - efficiently, and effectively - information from a DBMS.

**UNIT- I**

Introduction to Database Systems: Data - Database Applications - Evolution of Database - Need for Database Management – Data models - Database Architecture - Key Issues and Challenges in Database Systems.

**UNIT -II**

ER and Relational Models: ER Models – ER to Relational Mapping –Object Relational Mapping - Relational Model Constraints - Keys - Dependencies - Relational Algebra - Normalization - First, Second, Third & Fourth Normal Forms - BCNF – Join Dependencies.

**UNIT- III**

Data Definition and Querying: Basic DDL - Introduction to SQL - Data Constraints - Advanced SQL - Views - Triggers - Database Security – Embedded & Dynamic SQL.

**UNIT -IV**

Transactions and Concurrency: Introduction to Transactions - Transaction Systems - ACID Properties - System & Media Recovery - Need for Concurrency - Locking Protocols – SQL for Concurrency – Log Based Recovery - Two Phase Commit Protocol - Recovery with SQL- Deadlocks & Managing Deadlocks.

**UNIT -V**

Advanced Topics in Databases: Indexing & Hashing Techniques - Query Processing & Optimization - Sorting & Joins – Database Tuning - Introduction to Special Topics - Spatial & Temporal Databases – Data Mining and Warehousing.

**Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.**

**References:**

1. Abraham Silberschatz, Henry F. Korth, S. Sudharshan, —Database System Concepts, Sixth Edition, Tata McGraw Hill, 2010.
2. Ramez Elmasri, Shamkant B. Navathe, —Fundamentals of Database Systems, Sixth Edition, Pearson/Addison - Wesley, 2010.
3. C.J. Date, A. Kannan and S. Swamynathan, —An Introduction to Database Systems, Pearson Education, Eighth Edition, 2006.
4. Raghu Ramakrishnan, —Database Management Systems, Fourth Edition, McGraw Hill, 2015.

C-207	IT Lab 2 (Programming R)	50	0	0	2	2
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**Objective:**

After taking the course, students will be able to

- Use R for statistical programming, computation, graphics, and modeling,
- Write functions and use R in an efficient way,
- Fit some basic types of statistical models
- Use R in their own research,
- Be able to expand their knowledge of R on their own.

**SYLLABUS:**

**UNIT-I:**

Introduction, How to run R, R Sessions and Functions, Basic Math, Variables, Data Types, Vectors, Conclusion, Advanced Data Structures, Data Frames, Lists, Matrices, Arrays, Classes.

**UNIT-II:**

R Programming Structures, Control Statements, Loops, - Looping Over Non vector Sets,- If-Else, Arithmetic and Boolean Operators and values, Default Values for Argument, Return Values, Deciding Whether to explicitly call return- Returning Complex Objects, Functions are Objective, No Pointers in R, Recursion, A Quicksort Implementation-Extended Extended Example: A Binary Search Tree.

**UNIT-III:**

Doing Math and Simulation in R, Math Function, Extended Example Calculating Probability- Cumulative Sums and Products-Minima and Maxima- Calculus, Functions Fir Statistical Distribution, Sorting, Linear Algebra Operation on Vectors and Matrices, Extended Example: Vector cross Product- Extended Example: Finding Stationary Distribution of Markov Chains, Set Operation, Input /out put, Accessing the Keyboard and Monitor, Reading and writer Files,

**UNIT-IV:**

Graphics, Creating Graphs, The Workhorse of R Base Graphics, the plot() Function –Customizing Graphs, Saving Graphs to Files.

**UNIT-V:**

Probability Distributions, Normal Distribution- Binomial Distribution- Poisson Distributions Other Distribution, Basic Statistics, Correlation and Covariance, T-Tests,-ANOVA.

**References:**

- 1) The Art of R Programming, Norman Matloff, Cengage Learning
- 2) R for Everyone, Lander, Pearson
- 3) R Cookbook, PaulTeetor, Oreilly
- 4) R in Action,Rob Kabacoff, Manning.
- 5) Garrett Grolemond, Hands on Programming with R, Oreilly