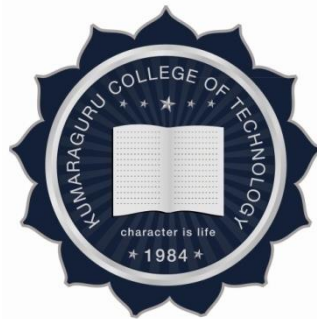



PG PROGRAMME
MASTERS OF TECHNOLOGY MANAGEMENT (MTM)
REGULATIONS 2018
CURRICULUM AND SYLLABUS
I - IV Semesters



Department of Textile Technology
KUMARAGURU COLLEGE OF TECHNOLOGY,
COIMBATORE

DECEMBER 2018

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MASTERS OF TECHNOLOGY MANAGEMENT

Program Educational Objectives (PEO)


At the end of the program

1. Graduates will become professionals, who would evaluate, deploy and manage emerging technologies in engineering organizations
2. Graduates will become middle to higher level management professionals with abilities and responsibilities in engineering management, data analysis, information technology, business operations, production, in all the areas of engineering and technology including health care management
3. Graduates will become professionals in leading research and development operations in technical enterprises for introducing new technologies.


Program Outcomes (PO)

Upon completion of Masters of Technology Management program, the student will be able to:

1. Apply skills and competencies in technology and management and manage engineering and business organizations
2. Work with interdisciplinary teams involving engineers, managers and technical professionals
3. Work as technical or managerial professionals in specialized areas such as data analysis, engineering management, information technology

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4. Will have the benefit of management education in addition to technical background, as an engineer to take-up managerial positions
5. Will have the ability to analyze business opportunities, operationalize technologies, and innovative ways of working including system development and quality aspects.
6. Will have strong foundation to evaluate a technologies in terms of its potential, its market and the risk involved and to manage a workforce, implement and manage change.

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KUMARAGURU COLLEGE OF TECHNOLOGY, COIMBATORE – 641 049
REGULATIONS 2018
Masters of Technology Management (MTM)
CURRICULUM and SYLLABUS

Semester I							
Course Code	Course Title	Course Mode	L	T	P	J	C
P18INT0001	Research Methodology and Statistics	Theory	3	0	0	0	3
P18TMT1101	Business Operations and Strategy	Theory	3	0	0	0	3
P18TMT1102	Engineering Economics	Theory	3	0	0	0	3
P18----	Elective - 1	Theory	3	0	0	0	3
P18----	Elective - 2	Theory	3	0	0	0	3
P18----	Elective – 3	Theory	3	0	0	0	3
Total Credits							18
Total Hours per week							18

SEMESTER-II							
Course Code	Course Title	Course Mode	L	T	P	J	C
P18INT0002	Product design and Development	Theory	3	0	0	0	3
P18TMT2101	Concepts in Technology Management	Theory	3	0	0	0	3
P18TMT2102	Project Management	Theory	3	0	0	0	3
P18----	Elective -4	Theory	3	0	0	0	3
P18-----	Elective - 5	Theory	3	0	0	0	3
Total Credits							15
Total Hours per week							15

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SEMESTER-III							
Course code	Course Title	Course Mode	L	T	P	J	C
P18---	Elective - 6	Theory	3	0	0	0	3
P18TMP3701	Colloquium-I	Presentation	0	0	0	6	3
P18TMP3702	Project Phase I	Project	0	0	0	20	10
Total credits							16
Total hours per week							26

SEMESTER-IV							
Course code	Course Title	Course Mode	L	T	P	J	C
P18TMP4701	Colloquium-II	Presentation	0	0		6	3
P18TMP4702	Project Phase II	Project	0	0	0	28	14
Total credits							17
Total hours per week							34
Grand Total Credits							66


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PROFESSIONAL ELECTIVES

1.TextileTechnology		L	T	P	J	C
Course Code	Course					
P18TME0001	Management of Textile Production	3	0	0	0	3
P18TME0002	Apparel Production	3	0	0	0	3
P18TME0003	Apparel Technology Management	3	0	0	0	3
P18TME0004	Strategic Technology Management in the Textile Complex	3	0	0	0	3
P18TME0005	Global Perspectives in Textiles Supply Chain Management	3	0	0	0	3

2.Business Management		L	T	P	J	C
Course Code	Course					
P18TME0011	Human Capital Management	3	0	0	0	3
P18TME0012	Materials Management	3	0	0	0	3
P18TME0013	Engineering Finance	3	0	0	0	3
P18TME0017	Concepts in Business Analytics	3	0	0	0	3
P18TME0018	Banking Financial Services Management	3	0	0	0	3
P18TME0020	Managerial Behavior And Effectiveness	3	0	0	0	3
P18TME0021	Software Project Management And Quality	3	0	0	0	3


3.Engineering Management		L	T	P	J	C
Course Code	Course					
P18TME0014	Manufacturing Enterprise	3	0	0	0	3
P18TME0015	Quality Management	3	0	0	0	3
P18TME0016	Supply Chain Management	3	0	0	0	3
P18TME0019	Design Thinking and Innovation Management	3	0	0	0	3

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4.Data Analytics		L	T	P	J	C
Course Code	Course					
P18ITE0021	Programming for Data Analytics	3	0	0	0	3
P18ITE0022	Machine Learning and Applications	3	0	0	0	3
P18ITE0023	Data and Visual Analytics	3	0	0	0	3
P18TME0041	Data science and Analytics	3	0	0	0	3
P18TME0042	Cloud Services and Virtualization	3	0	0	0	3

5.Information Technology		L	T	P	J	C
Course Code	Course					
P18ITE0024	Advanced Concepts in Cloud computing	3	0	0	0	3
P18ITE0025	Concepts in Cyber Security	3	0	0	0	3
P18ITE0026	Projects in Software Engineering	3	0	0	0	3


6: Health Informatics and Management		L	T	P	J	C
Courses code	Course					
P18TME0031	Healthcare Systems	3	0	0	0	3
P18TME0032	Health care Informatics	3	0	0	0	3
P18TME0033	Advanced Health care Management	3	0	0	0	3

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SYLLABUS

PROFESSIONAL CORE

SEMESTER I

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P18INT0001 RESEARCH METHODOLOGY AND STATISTICS

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1: Understand and apply the concepts of research

CO2: Apply statistical and other research tools to analyze and interpret data

CO3: Demonstrate skills in writing research topics

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Research Assignment, Presentation, 3.End Semester Examination
INDIRECT
1.Course-end survey

Introduction to Research Methods


9 Hours

Definition and Objectives of Research, Scientific Methods, Various Steps in Scientific Research, Research planning , Selection of a Problem for Research , Formulation of the Selected Problems, Purpose of the Research, Formulation of research objectives, Formulation of research questions, Hypotheses Generation and Evaluation, Literature search, and review, Research abstract

Introduction to Statistics

9 Hours

Population and Sample, Sampling and sample size, Population Proportion and Population Mean, Sample Proportion and Sample Mean, Estimation of Standard Error and confidence Interval, Identifying the dependent and independent variables, Introduction to data, Types of data and their importance, Descriptive Statistics and Inferential Statistics, Summarizing and describing data, Measures of Central Tendency and Measures of Dispersion, Mean, Median, Mode, Range, Variance, Standard Deviation

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Statistical Modeling and Analysis

12Hours

Probability Distributions, Normal, Binomial, Poisson, Fundamentals of Statistical Analysis and Inference, Hypothesis Testing, Confidence interval, Test of Significance, Comparison of Means (T test, Z test), Analysis of variance (ANOVA), Measures of association/Relationship, Chi-square test, Simple Regression Analysis, Multiple Regression analysis, Correlation, Data visualization techniques

Research Design/Plan

6Hours

Types and Methods of Research, Classification of Research, Research Ethics, Sampling Techniques, Methods of Collecting Primary Data, Use of Secondary Data, Experimentation, Design of Experiments, Survey Research and Construction of Questionnaires, Pilot Studies and Pre-tests, Data Collection methods, Processing of Data, Editing, Classification and Coding, Transcription, Tabulation, Validity and Reliability,

Research Reports

9 Hours


Structure and Components of Research Report/thesis, Types of Report, Planning of Report/thesis Writing, Research Report Format, Layout of Research Report, Presentation of data and Data Analysis Reporting, Mechanism of writing a research report, Principles of Writing, Writing of Report

Theory: 45 Hrs

Total Hours: 45 Hrs

REFERENCES

1. C.R. Kothari, Research Methodology Methods and Techniques, 3/e, New Age International Publishers, 2014.
2. Ranjit Kumar, Research Methodology A Step-by-Step Guide for Beginners, 4th Edition, Sage Publishing, 2014
3. R. Pannerselvam, Research Methodology, 2nd edition, Prentice Hall India, 2014
4. Devore, J.L., Probability and statistics for Engineering and the Sciences, Cengage Learning, ebook, 8th edition, 2010

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P18TMT1101

BUSINESS OPERATIONS AND STRATEGY

L	T	P	J	C
3	0	0	0	3

Course outcomes

After successful completion of this course, the students should be able to

CO 1: Explain strategy and strategic management process

CO2: Analyse various environment and portfolio scenarios for effective strategy formulation

CO3: Formulate corporate, business and functional strategies with global outlook

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1. Midterm Examination 2. Assignment; Group Presentation 3. End Semester Examination
INDIRECT
1. Course-end survey

10 Hours

Foundations of Strategic Management

Strategic Planning Process, Levels of Strategy - Strategic Intent through Vision, Mission and Value Statement – Building business model – Business Model canvas.

Internal Environment Analysis, External Environment Analysis:

12 Hours

Core competence, Distinctive Competencies, Resource Based View of the firm - Resource-Capabilities – Firm specific resources, VRIO Framework. Competitive Profile analysis - Building Blocks of Competitive Advantage - Porters Five Force Model, Building Competitive Advantage - Value Creation and Value Proposition approach. Strategic Choice and Strategic Thrust.

Strategy Formulation:

08 Hours

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Generic strategies, Functional strategies- Components - Relevant Techniques. Corporate Strategies, Disruptive strategies- Blue Ocean strategy. Global strategies. Termination strategies

Strategy Implementation

07Hours

Managing Change - Activating Strategies-Project Implementation – Procedural Implementation – Resource Allocation - Organizational Design – Structure, Control and Culture.

Strategy Evaluation and Control:

8 Hours


Process of evaluation - Strategic and Operational controls - 7S Framework, Balanced Score Card. Benefit Cost analysis, Performance Gap Analysis, Responsibility Centres.

Theory: 45 Hrs

Total Hours: 45Hrs

REFERENCE BOOKS

1. AzharKazmi, Strategic Management & Business Policy, 3rd edition, 2011, TMH
2. Arthur A. Thompson, Jr., A. J. Strickland III, John E. Gamble, Arun K Jain, Crafting and Executing Strategy (SIE): The Quest for Competitive Advantage: Concepts and Cases, 16/e TMH.
3. Charles W.L.Hill, Gareth R.Jones, Mellissa A. Schilling – Strategic Management: An integrated approach Cengage, 9th edition. 2012

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P18TMT1102

ENGINEERING ECONOMICS

L	T	P	J	C
3	0	0	0	3

Course Outcomes

At the end of the course, the students will :

CO1:Outline the basic concepts of Economics

CO2: Calculate Economical Equivalence

CO3: Evaluate projects using life cycle cost analysis

CO4:Evaluate rate of return analysis

CO5: Estimate the cost involved for manufacturing a product using spreadsheets.

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Examination 2.Assignment; Group Presentation 3.End Semester Examination
INDIRECT
1.Course-end survey

FOUNDATIONS OF ENGINEERING ECONOMICS


9 Hours

Professional ethics and Economic Decisions. Time Value of Money –Single amount factors – Uniform Series present worth factors. Calculations for uniform series using spreadsheets

INTEREST RATES

9 Hours

Nominal and Effective Interest rates – Payment period and compounding period – Effective interest rate for continuous compounding – interest rates that vary over time. Calculations for interest rate using spread sheets

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WORTH ANALYSIS

9 Hours

Present worth analysis – Equal life alternatives, annual worth analysis – differential life alternatives
- Life cycle cost analysis.

RATE OF RETURN ANALYSIS

9 Hours

one project – multiple alternatives- Benefit cost analysis – Breakeven and payback analysis

REPLACEMENT AND RETENTION DECISIONS


9 Hours

Deadlock Characterization – Handling Deadlocks – Deadlock Prevention – Avoidance – Detection – Recovery.


Theory: 45 Hrs Total Hours: 45 Hrs

REFERENCE BOOKS

1. Engineering Economy, Blank and Tarquin, 7th edition, McGraw Hill, 2012
2. Engineering Economy, Riggs J.L., 4th edition., McGraw Hill, 2002
3. Engineering Economy, Thuesen H.G. PHI , 2002

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SEMESTER II

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P18INT0002

PRODUCT DESIGN AND DEVELOPMENT

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

- CO1 Apply concepts of product development and outline product planning process
- CO2 Apply relative importance of customer needs in establishing product specifications
- CO3 Identify concept generation activities and summarize the methodology involved in concept selection and testing
- CO4 Outline supply chain considerations in product architecture and understand the industrial design process
- CO5 Apply design for manufacturing concepts in estimating manufacturing costs
- CO6 Apply principles of prototyping in product development economics and highlight importance of managing projects

Pre-requisite : Nil


COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

INTRODUCTION - DEVELOPMENT PROCESSES AND ORGANIZATIONS – PRODUCT PLANNING

9 Hours

Characteristics of successful product development to Design and develop products, duration and cost of product development, the challenges of product development. A generic development process, concept development: the front-end process, adapting the generic product development process, the AMF development process, product development organizations, the AMF

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organization. The product planning process, identify opportunities. Evaluate and prioritize projects, allocate resources and plan timing, complete pre project planning, reflect all the results and the process

IDENTIFYING CUSTOMER NEEDS - PRODUCT SPECIFICATIONS 9 Hours

Gathering raw data from customers, interpreting raw data in terms of customer needs, organizing the needs into a hierarchy, establishing the relative importance of the needs and reflecting on the results and the process. Specifications, establish specifications, establishing target specifications setting the final specifications.

CONCEPT GENERATION - CONCEPT SELECTION - CONCEPT TESTING 9Hours

The activity of concept generation clarify the problem search externally, search internally, explore systematically, reflect on the results and the process, Overview of methodology, concept screening, concept scoring, caveats. Purpose of concept test, choosing a survey population and a survey format, communicate the concept, measuring customer response, interpreting the result, reflecting on the results and the process.

PRODUCT ARCHITECTURE - INDUSTRIAL DESIGN - DESIGN FOR MANUFACTURING 9 Hours


Meaning of product architecture, implications of the architecture, establishing the architecture, variety and supply chain considerations, platform planning, related system level design issues. Assessing the need for industrial design, the impact of industrial design, industrial design process, managing the industrial design process, is assessing the quality of industrial design. Definition, estimation of manufacturing cost, reducing the cost of components, assembly, supporting production, impact of DFM on other factors.

PROTOTYPING - PRODUCT DEVELOPMENT ECONOMICS - MANAGING PROJECTS 9 Hours

Prototyping basics, principles of prototyping, technologies, planning for prototypes, Elements of economic analysis, base case financial mode,. Sensitive analysis, project trade-offs, influence of qualitative factors on project success, qualitative analysis. Understanding and representing task, baseline project planning, accelerating projects, project execution, postmortem project evaluation.


Theory: 45 Hrs

Total Hours: 45 Hrs

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REFERENCES

1. Karl Ulrich,T, Steven Eppinger, D, “Product Design and Development”, McGrawHill, 2015.
2. Chitale, AK, Gupta, RC, “Product Design and Manufacturing” PHI, 2013.
3. Timjones “New Product Development:An Introduction to a multifunctional process”, Butterworth-Heinemann, 1997.
4. GeofferyBoothroyd, Peter Dewhurst and Winston Knight,A, “Product Design for Manufactureand Assembly”, CRC Press, 2011.

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P18TMT2101

**CONCEPTS IN TECHNOLOGY
MANAGEMENT**

L	T	P	J	C
3	1	0	0	3

Course outcomes

After successful completion of this course, the students should be able to

CO1: Explain the basic concepts of technology management

CO2: Analyse and select a suitable technology by applying technology evaluating techniques

CO3: Outline the basic concepts of technology diffusion and commercialization

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1. Midterm Examination 2. Assignment; Group Presentation 3. End Semester Examination
INDIRECT
1. Course-end survey

TECHNOLOGY AND ITS IMPORTANCE IN BUSINESS

6 Hours

Definition – Features - Importance - Benefits - Achieving competitive advantage through technology - Types of technologies - Technology portfolio - Technology life cycle - Technology as an investment

MANAGEMENT OF TECHNOLOGY

10 Hours

Overview - Objectives of MOT – Strategic Management of Technology (SMOT) - Exploitation of Technology - Principles of MOT - The role of R&D in an organization - New product development process


TECHNOLOGY FORECASTING

9 Hours

Methods of forecasting technology – Technology obsolescence - Technology discontinuity - Technology audit – Technology scouting

TECHNOLOGY ABSORPTION AND TECHNOLOGY DIFFUSION

12 Hours

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Technology transfer- Technology evaluation - Technology absorption - Technology adoption - Technology diffusion - Technology cycles - Technology commercialization Business strategy and Technology strategy - Strategy and strategic management - Technology strategy - Linking business and technology strategy

ORGANIZATIONAL STRUCTURE

8 Hours


Organizational learning and leadership - Human technology - The importance of organizational resource for managing structure - The structure of an innovative organization - The role of a leader in an innovative organization - Risks and uncertainties associated with technology

Theory 45 Hours

Total Hours: 45Hrs

REFERENCES

1. Tarek Khalil, Management of Technology, Tata McGraw Hill, 2009
2. K.Nagarajan, 2015, A Brief Course on Technology Management,, New Age International, First edition

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P18TMT2102

PROJECT MANAGEMENT

L	T	P	J	C
3	0	0	0	3

Course Outcomes

At the end of the course, the students will

CO1: Explain the knowledge areas of project management

CO2: Apply tools and techniques of project management to monitor and control projects

CO3: Construct a project schedule and estimate cost using MS Project software

COURSE ASSESSMENT METHODS

DIRECT
1. Midterm Examination 2. Assignment; Group Presentation 3. End Semester Examination
INDIRECT
1. Course-end survey

INTRODUCTION

9 Hours

Definition - Program Management - Portfolio Management - Projects and Strategic Planning - Project Management Office - Operations and Project Management - Role of Project Manager – Processes - Processes Groups – Process Mapping – Project Team – Project Life Cycle – Stakeholders - Organizational Cultures and Styles - Organizational Structures - Organizational Process Assets- Enterprise Environmental Factors


PROJECT INTEGRATION MANAGEMENT

9 Hours

Project Integration Management Process – Project Charter – Project Management Plan – Direct and Manage Project – Monitor and control Project – Change control – Close project – Tools and Techniques, DPR preparation,
Project Scope Management - Project Scope Management Processes - Plan Scope Management - Collect Requirements - Define Scope - Create WBS - Validate Scope – Control Scope

PROJECT TIME MANAGEMENT

9 Hours

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Project Time Management Processes - Plan Schedule Management - Define Activities - Sequence Activities - Estimate Activity Resources— Estimate Activity Durations—Develop Schedule- Control Schedule

PROJECT COST MANAGEMENT

9 Hours

Managing Project Cost - Plan Cost Management—Estimate Costs— Determine Budget – Control cost – Tools and Techniques – PERT-CPM- Project Crashing **Project Quality Management-** Plan Quality Management- Perform Quality Assurance Control Quality, Tools and Techniques, Project Appraisal,IPR

BASICS OF OTHER KNOWLEDGE AREAS

9 Hours


English Language learning – General and corporate approach (Individual Project).

Project Human Resource Management – Project Communication Management - Project Risk Management - Project Procurement Management – Project Stakeholder Management - Introduction and basic concepts **Introduction to MS Project** – Exercise problems


Theory: 45HrsTotal Hours: 45Hrs

REFERENCES

1. A. Chandrasekaran, 2013, Road to Success, Info career Pvt. Ltd., 2nd Edition
2. Joseph Phillips, 2013, Project Management Professional, Tata McGraw Hill Ltd.,4th edition

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SEMESTER III

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P18TMP3701

COLLOQUIUM - I

L	T	P	J	C
0	0	0	6	3

Course Outcomes

After successful completion of this course, the students should be able to

CO 1: Explain the knowledge of any one chosen field thoroughly


CO 2: Apply the gained knowledge in similar situations in industry

COURSE ASSESSMENT METHODS


DIRECT
1.Evaluation will be based on practical training and presentation with a report
INDIRECT
1.Course-end survey

Chosen any one field and take training in industry and collect information or do survey

P18TMP3702	PROJECT PHASE - I	L	T	P	J	C
		0	0	0	20	10
Course Outcomes						
After successful completion of this course, the students should be able to						
CO 1: Explain the knowledge of the field selected thoroughly						
CO 2: Apply the gained knowledge to prepare for doing experiment						
COURSE ASSESSMENT METHODS						
DIRECT						
1.Presentation with a report						
INDIRECT						
1.Course-end survey						
Choosing project title; formulation of work plan; completing targeted work for the semester and presentation of complete work of progress						

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SEMESTER - IV

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P18TMP4701

COLLOQUIUM - II

L	T	P	J	C
0	0	0	6	3

Course Outcomes

After successful completion of this course, the students should be able to

CO 1: Explain the knowledge of any one chosen field thoroughly


CO 2: Apply the gained knowledge in similar situations in industry

COURSE ASSESSMENT METHODS

DIRECT
1.Evaluation will be based on practical training and presentation with a report
INDIRECT
1.Course-end survey


Chosen any one field and collect information/take training in industry or do survey

P18TMP4702	PROJECT PHASE - II	L	T	P	J	C
		0	0	0	28	14
Course Outcomes						
After successful completion of this course, the students should be able to						
CO 1: Apply the gained knowledge in phase I and prepare experimental plan						
CO 2: Do the experiments and analyse the results						
COURSE ASSESSMENT METHODS DIRECT						
1.Presentation with a report						
INDIRECT						
1.Course-end survey						
Continuation of planned tasks started in Project Part 1, thesis writing and presentation of complete work.						

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PROFESSIONAL ELECTIVES

1. TEXTILE TECHNOLOGY

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P18TME0001 MANAGEMENT OF TEXTILE PRODUCTION

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

- CO1: Analyze the structure of Textile Industry
- CO2: Evaluate the production planning in spinning industry
- CO3: Apply the quality management system in spinning industry
- CO4: Explain the fabric production systems.
- CO5: Evaluate wet processing and pollution control systems.
- CO6: Apply the enterprise resource planning in Textile Industry

COURSE ASSESSMENT METHODS

DIRECT
1. Midterm Examination 2. Assignment; Presentation 3. End Semester Examination
INDIRECT
1. Course-end survey

INTRODUCTION

9 Hours

Indian Textile Industry: Structure, Cotton ginning Industry. Manmade fibre industry spinning Industry weaving Industry sequence of processes. Textile processing Industry, Knitting industry Garment industry Technical textiles Industry. Textile Policy. Sickness of Textile Industry- Analysis and options. Global textile scenario.


GINNING AND SPINNING INDUSTRY

9 Hours

Ginning concept cotton varieties cotton production in India and world. Spinning- blow room operating principle, carding operating principle, draw frame simplex, spinning-ring spinning ,open end spinning Production, planning and control: types of production systems and problems of planning and control, Quality management. Balancing of Machinery, Waste Management, Power requirement,

WEAVING INDUSTRY

9 Hours

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Power loom sector. Type of looms used. Conventional looms, automatic looms, shuttles less looms-projectile , rapier ,air jet, water jet looms. Production capacity Status of Technology used. Labour problems. Techno economics of power loom industry. Productivity and improvement techniques. Skill requirements. Organized mill sector, Quality management

TEXTILE WET PROCESSING

9 Hours

Souring and bleaching, Dyeing methods, Dyeing machines-winch dyeing, Gigger dyeing, Soft flow dyeing, Water requirements for dyeing, effluent tremens, pollution control ,statutory requirements ,zero discharge of effluents

KNITTING AND GARMENT INDUSTRY

9 Hours

Knitting concept. Warp and weft knitting. Circular knitting machines- conventional and high speed knitting machines productivity. Garment industry pattern making and cutting, stitching, quality checking and packing. Sourcing: Material Requirement Planning vendor relations, selection of vendors., Manpower requirement

Thorey: 45 Hrs

Total Hours: 45 Hrs

REFERENCES

1. Oxtoby E “Spun Yarn Technology” butter worth’s, London, New Edition 2002.
2. Adanur S., “Handbook of Weaving”, Woodhead Publishing Limited, 2001.
3. Prabir Kumar Banerjee., “Principles of Fabric Formation”, CRC Press, 2014.
4. W.Klein, “New spinning systems”, The Textile Institute Manchester, U.K. 1993.
5. Broadbent D.A., “Basic Principles of Colouration”, Society of Dyers & Colourists, 2001.
6. D.J. Spencer., “Knitting technology”, Textile Institute Manchester, 2005.
7. A Vaidya, “Production of synthetic fibres”, Prentice Hall of India Pvt. Ltd., New Delhi, 1988.
8. A Ormerod, Modern preparation and weaving Machinery , ,Woodhead publishing Ltd,2004
9. Ormerod.A., “Textile Project Management”, The Textile Institute, Manchester, New edition, ISBN: 1870812387, 2002.
10. Harold Carr and Barbara Latham, “The Technology of clothing manufacture”, 4th Edition Wiley-Blackwell, 2008

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18TME0002

APPAREL PRODUCTION

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1: Analyze Pre production activities in apparel industry

CO2: Develop the pattern making, for Kids, Baby's, Men's and Women's wear

CO3: Evaluate the Requirements and Methods of Marker planning and Cutting

CO4: Create different types of Stitches & Seams on apparel as per end use.

CO5: Evaluate different types of pressing and packing methods

CO6: Design on pattern/cutting by CAD and Plant layouts/Flexible

COURSE ASSESSMENT METHODS

DIRECT
1. Midterm Examination 2. Assignment; Presentation 3. End Semester Examination
INDIRECT
1. Course-end survey

INTRODUCTION TO INDIAN APPAREL INDUSTRY


9 Hours

Technical pack- Pre production activities: types of samples and sample approval – Principles and advantages of Eight Head Theory- Body measurements - Techniques in pattern making - (i) Drafting (ii) Draping (iii) Flat pattern their advantages and disadvantages. Tools for pattern making

PATTERN ENGINEERING

9 Hours

Set-in-sleeves: Plain, Puff, Bell, Bishop. Collars: Convertible, Shirt, Mandarin, Peter pan. Cuff: Shirt cuff, French cuff and Contoured cuff. Drafting: Basic principles and

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Methodologies used to draft block patterns for the following garments: Shirt, Trousers, Skirts, Blouses, Nightwear

MARKER PLANNING

9 Hours

Requirements and Methods-Marker efficiency Advantages of computer aided marker planning. Spreading: Requirements and Methods-Types spreading and lay. Cutting: Objectives-methods cutting machines-Straight knife-Round knife-Band knife- Die cutting computer controlled cutting-Lectra-Gerber-Tuka-Reach CAD.

SEWING TECHNOLOGY

9 Hours

Definition of Stitch and Seam- Types Stitch and Seam- Needles: Parts, sizes and classification- sewing threads - Stitch and seam defects.; sewing machinery and working aids. Feed systems.

FUSING TECHNOLOGY


9 Hours

Means-equipment and Methods-Requirements- Pressing: Purpose Categories - Means- Equipment and methods-Pleating- Permanent press. Packing-Method-Components of packing-Trims and accessories- buttons Zippers-Velcro-Hook and eye-Hook and Bar- Fasteners-Closures-Lining Interlining-Wadding- Tapes-Elastic- Popular brands

Thorey: 45 Hrs Total Hours: 45 Hrs

REFERENCES

1. Harold Carr and Barbara Latham, “The Technology of clothing manufacture”, 4th Edition Wiley-Blackwell, 2008.
2. K.R.Zarapkar, “System of cutting”, Navneet Publications, Mumbai, 2005.
3. Jacob Solinger, “Apparel Manufacturing Handbook”, Van Nostrand Reinhold Company, 1988.
4. Hayden Peggall, “The Complete Dress Maker”, Marshal Cavendish, London, 1984.
5. Laing R.M. and Webster J, “Fundamentals of stitches and Seams”, Textile Institute, 1998.
6. Gerry Cooklin, Steven George Hayes and John McLoughlin, “Introduction to Clothing Manufacture”, Wiley-Blackwell, 2006

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P18TME0003

APPAREL TECHNOLOGY MANAGEMENT

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1: Evaluate the product life cycle and clothing product strategies.

CO2: Analyse the clothing demand analysis and forecasting techniques.

CO3: Apply the supply chain strategies in Apparel Industry.

CO4: Create retail assortment and model stock plan.

CO5: Design the Inventory model and apparel sourcing method

CO6: Develop the merchandise planning for a Apparel Product


COURSE ASSESSMENT METHODS

DIRECT
1. Midterm Examination 2. Assignment; Group Presentation 3. End Semester Examination
INDIRECT
1. Course-end survey

THE MANAGEMENT OF CLOTHING PRODUCTS

9 Hours

Product concept -Classification of products-Clothing products: definition, occurrence and classification -Products mix: definition, features-Product life cycle (PLC) - Commercial product lifecycle -The process of developing new products-New product concept -Stages of developing new products -Particularities of the developing new clothing products-Clothing product strategies.

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CLOTHING DEMAND ANALYSIS

9 Hours

Demand Management-Demand Forecasting-Forecasting components-Forecasting process- Forecasting methods and Techniques-Apply various forecast research methods in preparation for developing, planning, purchasing, or merchandising apparel lines and collections. Qualitative AND quantitative forecasting technique- Case study and trend research in identifying fashion opportunities.

SUPPLY CHAIN STRATEGIES IN APPAREL INDUSTRY

9 Hours

Industry Overview- Consumer Segments -Sales Channels-Supply Chain Structure - Trends and Drivers of Supply Chain- Sourcing Trends -Distribution Channels- Market Concentration- Supply Chain Challenges and Opportunities. Product Design and Launch-Merchandise Planning and Allocation-Sourcing and Production-Logistic.

RETAIL MERCHANDISE MANAGEMENT

9 Hours

Product management - Retail Assortment Planning -model stock plan, constraining factors, types of suppliers and selection criteria, category management, merchandise management planning in retail and export segments. New technologies and the impact on consumers' shopping experiences-Employees contribution to sales productivity and customer satisfaction in retail establishments.

APPAREL SOURCING AND INVENTORY MANAGEMENT

9 Hours

Sourcing concepts-Sourcing strategies-Lean and agile supply chains-Risk and benefits of single and multiple sourcing -Risk and benefits of local and global sourcing-Purchasing Process-Supplier selection-Supplier selection criteria-Methods for supplier selection-Decision Inventory models -decisions making-inventory replenishment, and seasonal and long-term replenishment strategies. Case study method to developing seasonal financial plans, creating store plans, and balancing multi-store inventories.


Theory : 45 Hrs

Total Hours: 45 Hrs

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REFERENCES

1. Susan Dillon, — The Fundamentals of Fashion Management, AVA Publishing (UK) LTd., 2012
2. Kathryn McKelvey and Janine Munslow, —Fashion Forecasting, Wiley – Blackwell, USA, 2008
3. Maurice J. Johnson & Evelyn C.Moore, —Apparel Product Development, Second Edition, Prentice Hall Upper saddle river, New Jersey, 2001.
4. Metha, P.L., —Managerial Economics Sultan Chand and Co.Delhi, 2007.
5. Doris H. Kincade, Fay Gibson, and Ginger Woodard —Merchandising Math: A Managerial Approac ,Pearson Education, Inc. Published by Prentice Hall, 2004.

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**P18TME0004 STRATEGIC TECHNOLOGY
MANAGEMENT IN THE TEXTILE
COMPLEX.**

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

- CO 1. To understand conceptual and analytical framework of strategic management
- CO.2 To study strategic management process
- CO.3 To understand basic approaches in strategy formulation, implementation, evaluation and control.
- CO4 Analyse the Strategy Implementation
- CO5.Explain Strategic Evaluation and Control
- CO.6 Explain Strategy Formulation

COURSE ASSESSMENT METHODS

DIRECT
1. Midterm Examination 2.Assignment; Group Presentation 3.End Semester Examination
INDIRECT
1.Course-end survey

INTRODUCTION


9 Hours

Definition & nature of Corporate Planning, Advantages and disadvantages, -Concept of strategy, levels at which strategy operates, strategic decision making, approaches to strategic decision making

STRATEGIC MANAGEMENT

9 Hours

Definition of strategic management, strategic management process, -Strategic intent: Vision, Mission, Goals and Objectives. -Environmental scanning and appraisal, Organisational appraisal, strategic advantage analysis

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STRATEGY FORMULATION

9 Hours

Corporate level strategies- Stability, Expansion, retrenchment, and Combination strategies -Business level strategies- Cost leadership, Differentiation and focus business Strategy -Strategic analysis and choice- Tools and techniques for strategic analysis, Arthur D Little Life Cycle Approach, SWOT analysis, Ansoff's Product - Market Matrix, Vulnerability Analysis, GAP analysis, Porter's five forces model, Value-chain analysis, Benchmarking, BCG Matrix, GE-9 Cell Matrix, TOWS Matrix, Grand Strategy Matrix, Mckinsey's 7'S framework.

STRATEGY IMPLEMENTATION

9 Hours

Interrelationship of formulation and implementation, Resource allocation, Structures for strategies, strategic leadership, corporate culture, politics and power, Ethics and Social responsibility, Guidelines for a Successful Responsible Firm, Functional Strategies- Financial, marketing, personnel and operations plans and policies.

STRATEGIC EVALUATION

9 Hours


Strategic Evaluation and Control Overview, Strategic Control, Techniques of strategic evaluation and control, Strategies for the Bottom of the Pyramid, Digitalisation strategies, Tailoring strategy to fit specific industry and company situation

Theory: 45 Hrs

Total Hours: 45 Hrs


REFERENCES

1. Strategic Management & Business Policy, AzarKazmi, Tata McGraw Hill, 3rd Ed. 2009.
2. Strategic Management, Concepts & Cases, Fred R. David, Pearson Education, 9th Ed.2005.
3. Competitive Advantage, Michael E. Porter, Free Press.
4. Globalisation, liberalisation and strategic Management, V. P. Michael, Himalaya Publishing House.

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5. Crafting and Executing Strategy- The quest for competitive advantage, Concept & Cases-A.A. Thompson, A.J. Strickland, John E. Gamble, Arun K. Jain, Tata McGraw Hill-2010

6. Business Policy and Strategic Management, P. Subba Rao, Himalaya Publishing House

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**P18TME0005 GLOBAL PERSPECTIVES IN TEXTILES
SUPPLY CHAIN MANAGEMENT**

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1. Describe the to Supply Chain Management

CO2. Analyse the global Sourcing of textiles

CO3. Analyse the logistics

CO4. Explain the global Forecasting

CO5. Explain the global Textile Supply Chain Management

CO 6. Analyse the demand Planning of textiles

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1. Midterm Examination 2. Assignment; Presentation 3. End Semester Examination
INDIRECT
1. Course-end survey

INTRODUCTION TO SUPPLY CHAIN MANAGEMENT

9 Hours

SCM Activities-Managing Flows Through the Supply Chain-The Bullwhip Effect- Customer Focus- Spanning Nature of SCM- Intra-Organizational Integration- Cross-Enterprise Integration- SCM Versus Logistics - The Rise of SCM& Characteristics of a Competitive Supply Chain - Trends in SCM-The Lean Supply Chain-Managing Supply Chain Disruptions- Supply Chain Security- Sustainability and the “Green” Supply Chain.

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GLOBAL SOURCING OF TEXTILES

9 Hours

What is Sourcing-Purchasing, Sourcing, and Supply Management- Evolution of the Sourcing Function- Commercial Versus Consumer Sourcing- Impact on the Organization and the Supply Chain - The Sourcing Function- The Sourcing Process-Cost Versus Price- Bidding or Negotiation? - Sourcing and SCM- Functional Versus Innovative Products- Single Versus Multiple Sourcing- Domestic Versus Global Sourcing- Outsourcing- Electronic Auctions (E-Auctions)- Measuring Sourcing Performance

LOGISTICS

09 Hours

What Is Logistics?- The Logistics Function- Evolution of Logistics- Impact on the Organization- Impact on the Supply Chain- Reverse Logistics-Logistics Tasks- Transportation- Storage- Material Handling- Packaging- Inventory Control- Order Fulfillment- Facility Location & multimodal Transportation- Role of Warehouses in the Supply Chain-Cross-Docking.

GLOBAL FORECASTING & DEMAND PLANNING OF TEXTILES

9 Hours

Forecasting Versus Planning- Impact on the Organization- Impact on Supply Chain Management-Principles of Forecasting- Steps in the Forecasting Process-Types of Forecasting Methods- Qualitative Forecasting Methods- Quantitative Forecasting Methods- Collaborative Forecasting and Demand Planning- Collaborative Planning, Forecasting and Replenishment (CPFR)- Sales and Operations Planning (S & OP

GLOBAL TEXTILE SUPPLY CHAIN MANAGEMENT

9 Hours


The Global Environment-Opportunities and Barriers-Factors Impacting Global Supply Chains-& Global Market Challenges-The Global Consumer-Global Versus Local Marketing-Cultural Challenges-& Global Infrastructure Design-Infrastructure Challenges- Role of Technology-& Cost Considerations-Hidden Costs-Non-Cost Considerations-& Political and Economic Factors-Impact of Exchange Rate Fluctuations-Regional Trade Agreements-Impact of Non-Tariff Barriers.

Theory: 45Hrs Total Hours: 45Hrs

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REFERENCES

1. Supply Chain Management: A Global Perspective, Nada R. Sanders, ISBN: 978-0-470-14117-5, Wiley
2. Global Purchasing and Supply Management: Fulfill the Vision, Victor H. Pooler, David J. Pooler, Samuel D. Farney, Kluwer Academic Publishers Norwell, MA, USA ©2004 , ISBN:140207816
3. Fashion Logistics: Insights into the Fashion Retail Supply Chain-By John Fernie, David B. Grant, Kogan Page Publishers, New Delhi.
4. International Supply Chain Management and Collaboration Practices edited by Wolfgang Kersten, Books on Demand
5. The Global Textile and Garments Industry: The Role of Information and Communication Technologies (ICTs) in Exploiting the Value Chain AninfoDev publication prepared by Enlightenment Economics Edited by: Kerry McNamara (infoDev) June, 2008.
6. Global Operations and Logistics: text and cases (Philippe-Pierre Dornier, Ricardo Ernst, Michel Fender &PanosKouvelis, Wiley.

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2. BUSINESS MANAGEMENT

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P18TME0011

**HUMAN CAPITAL
MANAGEMENT**

L	T	P	J	C
3	0	0	0	3

Course Outcomes

At the end of the course, the students will have:

CO1: an understanding of HCM in the Global Business context

CO2: will be ready to use workforce planning and analysis tools

CO3: will have skills to implement talent management practices

CO4. knowledge of HR practices and processes needed for a manager

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1. Midterm Examination 2. Assignment; Group Presentation 3. End Semester Examination
INDIRECT
1. Course-end survey

**HUMAN CAPITAL MANAGEMENT IN THE CONTEXT OF GLOBAL
BUSINESS OPERATIONS**

3 Hours


Global organizations and the role of human capital, Evolution of Human capital management

Modern practices, tools and techniques for HCM

WORKFORCE PLANNING AND ANALYTICS

15 Hours

Insight into workforce data. Workforce planning Workforce cost planning, Workforce benchmarking Workforce process analytics and measurement ,Use of industry standard tools and software for planning and analysis

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TALENT MANAGEMENT

15 Hours

Competency management Recruiting Employee performance management, Talent assessment and review Employee development Compensation management

HUMAN RESOURCE PROCESSES

12 Hours


Employee administration Organizational management Benefits management ,Time and attendance management Payroll management HCM processes and industry practices

Theory: 45 Hrs

Total Hours: 45 Hrs

REFERENCES

1. A Handbook of Human Resource Management Practice,315,Michael Armstrong - 2006
2. Strategic Human Resource Management in Health Care,,Myron D. Fottler, Naresh Khatri, Grant Theodore Savage - 2010
3. The Future of Human Resource Management: 64 Thought Leaders Explore ... ISBN=0471733296, Mike Losey, Sue Meisinger, Dave Ulrich - 2005
4. Human Resource Management in the Knowledge Economy: New Challenges, ... ISBN=1576751597, Mark L. Lengnick-Hall, Cynthia A. Lengnick-Hall - 2003
5. Human Resource Management: Theory and Practice, John Bratton, Jeff Gold - 2012
6. Human Resource Management in Health Care: Principles and Practice ISBN=0763735310, Fallon, Charles R. McConnell - 2007
7. Reassessing Human Resource Management ISBN1446235173, Paul Blyton Peter Turnbull, Professor Paul Blyton, Prof Peter J Turnbull - 1992
8. A Framework For Human Resource Management ISBN=8131761061, Gary Dessler - 2006

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P18TME0012

MATERIALS MANAGEMENT

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1: Materials management process

CO2: Materials requirements planning

CO3: Inventory management

CO4: Use of industry standard tools and techniques in materials management

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1. Midterm Examination 2. Assignment; Group Presentation 3. End Semester Examination
INDIRECT
1. Course-end survey

INTRODUCTION


9 Hours

Operating environment-aggregate planning-role, need, strategies, costs techniques, approaches-master scheduling-manufacturing planning and control system-manufacturing resource planning-enterprise resource planning-making the production plan

MATERIALS PLANNING

9 Hours

Materials requirements planning-bill of materials-resource requirement planning-manufacturing resource planning-capacity management-scheduling orders-production activity control-codification.

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INVENTORY MANAGEMENT

9 Hours

Policy Decisions-objectives-control -Retail Discounting Model, Newsvendor Model; EOQ and EBQ models for uniform and variable demand With and without shortages - Quantity discount models. Probabilistic inventory models.

PURCHASING MANAGEMENT

9 Hours

Establishing specifications-selecting suppliers-price determination-forward buying-mixed buying strategy-price forecasting-buying seasonal commodities-purchasing under uncertainty-demand management-price forecasting-purchasing under uncertainty-purchasing of capital equipment-international purchasing

WAREHOUSE MANAGEMENT

9 Hours


Warehousing functions – types - Stores management-stores systems and procedures-incoming materials control-stores accounting and stock verification-Obsolete, surplus and scrap-value analysis-material handling-transportation and traffic management -operational efficiency-productivity-cost effectiveness-performance measurement .

Theory: 45 Hrs

Total Hours: 45 Hrs

REFERENCES

1. J.R.TonyArnold,StephenN. Chapman, Lloyd M.Clive, Materials Management, Pearson, 2012.
2. P. Gopalakrishnan, Purchasing and Materials Management, Tata McGraw Hill, 2012
3. A.K.Chitale and R.C.Gupta, Materials Management, Text and Cases, PHI Learning, 2nd Edition, 2006
4. A.K.Datla, Materials Management, Procedure, Text and Cases, PHI Learning,2nd Edition, 2006
5. Ajay K Garg, Production and Operations Management, Tata McGraw Hill , 2012
6. Ronald H. Ballou and Samir K. Srivastava, Business Logistics and Supply Chain Management, Pearson education, Fifth Edition
7. S. N. Chary, Production and Operations Management, Tata McGraw Hill , 2012

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P18TME0013

ENGINEERING FINANCE

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

1. Apply financial concepts and techniques to assess engineering projects
2. Have skills to value capital investment
3. Be able to use analytical skills to evaluate engineering projects

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1. Mid Term Assessment 2. Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3. End Semester Examination
INDIRECT
1. Course-end survey

FINANCE IN THE CONTEXT OF ORGANIZATIONAL MANAGEMENT 9 Hours


Finance in the Context of Organizational Management , Concepts of Engineering Finance

TIME VALUE OF MONEY 9 Hours

Time value of money , Cash flows , Economic equivalence-General principles, Calculations

RISK ANALYSIS, 9Hours

Risk Analysis, Sensitivity analysis , Break even Analysis, Scenario Analysis, Probability concept and investment decisions, Real option analysis

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VALUATION OF ENGINEERING PROJECTS**9 Hours**


Valuation of Engineering Projects ,Financing and Investment: Stocks and Bonds , Risk and Return: Market Analysis ,Debt Management Analysis, Liquidity Analysis, Asset Management Analysis

COMPUTER TOOLS FOR ENGINEERING FINANCE , FINANCIAL STATEMENT, BALANCE SHEET PREPARATION**9 Hours**

Computer tools for Engineering Finance , Financial Statement, Balance sheet preparation, Income statement, Cash Flow Statement

Theory: 45 Hrs**Total Hours: 45 Hrs****REFERENCES**

1. Fundamentals of Financial Management, Concise Edition, 9th + Aplia™, 1 term Instant Access, Eugene F. Brigham and Joel F. Houston, Publisher: Cengage Learning (ISBN10: 1-337-12471 ,ISBN13: 978-1-337-12471-3)
2. Contemporary Engineering Economics ,Chan S. Park PHI Learning Private Ltd,2011(ISBN-978-81-203-4209-5)

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P18TME0017

**CONCEPTS IN BUSINESS
ANALYTICS**

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1: Explain the role of Business Analytics in an organization.

CO2: Analyze the need to implement the business analytics process in an organization.

CO3: Develop a simple Business Analytics strategy for a business domain

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

OVERVIEW OF BUSINESS ANALYTICS

9 Hours

Introduction to Analytics, The Paradigm Shift- From Data to Insight, From Business Intelligence to Business Analytics, Levels of "Intelligence", Opportunities and avenues in Business Analytics

INTRODUCTORY DATA MINING TECHNIQUES:

9 Hours

Linear Regression, Nearest Neighbor Technique, Euclidean Distance Measure; Market Basket Analysis: Support, Lift, Confidence

PRESCRIPTIVE ANALYTICS

9Hours

Ensemble Methods: Random Forest, Neural Networks, Deep learning, Clustering, Associative Rule Mining

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SUPERVISED LEARNING WITH REGRESSION AND CLASSIFICATION 9 Hours
TECHNIQUES

Bias-Variance Dichotomy, Model Validation Approaches, Logistic Regression, Linear Discriminant Analysis, Quadratic Discriminant Analysis

TECHNOLOGY FOUNDATIONS FOR BIG DATA 9 Hours


Big data technology components Virtualization, Cloud and big data. Big data management – Operational databases, Map Reduce fundamentals, The Hadoop foundation and Ecosystem - Challenges for big data analytics

Theory: 45 Hrs

Total Hours: 45 Hrs

REFERENCES

- 1.Hardoon R., David and Shmulei G., 2013, Getting Started with Business Analytics: Insightful Decision-Making, Boca Raton Florida, Chapman and Hall/CRC
2. Larose T & Larose C,2015,Data mining & predictive analytics, Utah, John Wiley & Sons

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**P18TME0018 BANKING FINANCIAL SERVICES
MANAGEMENT**

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1: Price various types of loans proposed by banks to various prospective borrowers with different risk profiles and

CO:2 Evaluate the performance of banks

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation 3.End Semester Examination
INDIRECT
1.Course-end survey

OVERVIEW OF INDIAN BANKING SYSTEM


9 Hours

Overview of Indian Banking System, Functions of banks, key Acts governing the functioning of Indian banking system – RBI Act 1934, Negotiable Instruments Act 1881, Banking Regulations Act 1948 – Rights and obligations of a banker, Overview of Financial statement of banks – Balance sheet and Income Statement.

SOURCES AND APPLICATION OF BANK FUNDS

9 Hours

Capital adequacy, Deposits and non-deposit sources, Designing of deposit schemes and pricing of deposit services, application of bank funds – Investments and Lending functions, Types of lending – Fund based, non-fund based, asset based – Different types of loans and their features, Major

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components of a typical loan policy document, Steps involved in Credit analysis, Credit delivery and administration, Pricing of loans, Customer profitability analysis.

CREDIT MONITORING AND RISK MANAGEMENT **9Hours**

Need for credit monitoring, Signals of borrowers’ financial sickness, Financial distress prediction models – Rehabilitation process, Risk management – Interest rate, liquidity, forex, credit, market, operational and solvency risks – risk measurement process and mitigation, Basic understanding of NPAs and ALM.

MERGERS, DIVERSIFICATION AND PERFORMANCE EVALUATION **9 Hours**

Mergers and Diversification of banks into securities market, underwriting, Mutual funds and Insurance business, Risks associated therewith. Performance analysis of banks – background factors, ratio analysis and CAMELS.

HIGH TECH E-BANKING **9 Hours**


Payment system in India – Paper based, e-payments – Electronic banking – advantages – Plastic money, E-money – Forecasting of cash demand at ATMs – Security threats in e-banking and RBI’s initiatives.

Theory: 45 Hrs

Total Hours: 45 Hrs

REFERENCES

1. Padmalatha Suresh and Justin Paul, “Management of Banking and Financial Services, Pearson, Delhi, 2012.
2. Meera Sharma, “Management of Financial Institutions – with emphasis on Bank and Risk Management”, PHI Learning Pvt. Ltd., New Delhi 2010.
3. Peter S. Rose and Sylvia C. and Hudgins, “Bank Management and Financial Services”, Tata McGraw Hill, New Delhi, 2012.
4. Madura, Financial Institutions & Markets, 10th edition, Cengage, 2016.

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P18TME0020

**MANAGERIAL BEHAVIOUR
AND EFFECTIVENESS**

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1 Will gain knowledge about defining the managerial job

CO2 Will gain knowledge about the concept of managerial effectiveness

CO3 Will gain knowledge of environmental issues in managerial effectiveness

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

DEFINING THE MANAGERIAL JOB

9 Hours

Descriptive Dimensions of Managerial Jobs – Methods – Model – Time Dimensions in Managerial Jobs – Effective and Ineffective Job behavior – Functional and level differences in Managerial Job behaviour


DESIGNING THE MANAGERIAL JOB

9 Hours

Identifying Managerial Talent – Selection and Recruitment – Managerial Skills Development – Pay and Rewards – Managerial Motivation – Effective Management Criteria – Performance Appraisal Measures – Balanced Scorecard - Feedback – Career Management – Current Practices.

HE CONCEPT OF MANAGERIAL EFFECTIVENESS

9Hours

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P18TME0021

**SOFTWARE PROJECT
MANAGEMENT AND QUALITY**

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO 1 Manage different phases of Software Project Management

CO 2 Identify Risk and create risk mitigation plan

CO 3 Apply software quality assurance for better quality software delivery

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

PROJECT MANAGEMENT OVERVIEW

9 Hours


What is Project and Project Management, Various phase of Project Management, Project Stakeholders, Project Management Organization (PMO);Roles and Responsibilities of Project Manager. Brief introduction to various process models - Waterfall, RAD, V, Spiral, Incremental, Prototyping, Agile- SCRUM, Extreme Programming (XP) and Kanban Project Initiation - Project Charter; Statement of Work (SoW)

PROJECT PLANNING

9 Hours

Project Planning Activities- Project Scope, Work Breakdown Structures (WBS), Software estimation methodologies - COCOMO Model and Function Point

Project Scheduling Techniques – Program Evaluation and Review Technique (PERT), Gantt Chart and Critical Path Method (CPM)

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PROJECT TRACKING

9Hours

Monitoring and Control, Project Status Reporting; Project Metrics; Earned Value Analysis (EVA); Project Communication Plan & Techniques; Steps for Process Improvement. Risk Management: Concepts of Risks and Risk Management; Risk Management Activities; Effective Risk Management; Risk Categories; Aids for Risk Identification; Potential Risk Treatments; Risk Components and Drivers; Risk Prioritization.

PROJECT CLOSURE

9 Hours

Project Closure Analysis, Lesson Learnt Software Quality Assurance-Software Quality Assurance Activities; Software Qualities; Software Quality Standards – ISO Standards for Software Organization, Capability Maturity Model (CMM), Comparison between ISO 9001 & SEI CMM, Other Standards.

AGILE PROJECT MANAGEMENT WITH SCRUM

9 Hours


Agile Manifesto and Agile Principles ,Agile Scrum - Purpose, Values, Scrum Framework, Scrum Roles – Product Owner, Scrum Master & Team, Scrum Events – Sprint Planning, Daily Scrum/Stand-up Meeting, Sprint Review, Sprint Retrospective, Scrum Artefacts – Product Backlog, Sprint Backlog, Increment and Definition of Done (DoD), Agile estimation – Story Point

Theory: 45 Hrs

Total Hours: 45 Hrs

REFERENCES

1. Bob Hughes and Mike Cotterell, Software Project Management, Tata McGraw Hill, 5thEdition
2. Jalote, “Software Project Management in Practice”, Pearson Education
3. Ramesh, Gopaldaswamy, "Managing Global Projects", Tata McGraw Hill
4. Ken Schwaber, Agile Project Management with Scrum, Microsoft Press
5. Mike Cohn, Agile Estimating & Planning, Pearson
6. Royce, “Software Project Management”, Pearson Education, 1999.

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3. ENGINEERING MANAGEMENT

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P18TME0014 MANUFACTURING ENTERPRISE

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

1. Be able to identify the business processes involved in the architecture of a manufacturing enterprise.
2. Be able to compare the different organization structure and decide on the suitable structure.
3. Be able to carry out independent study on the assessment of process performance measures.
4. Be able to carry out process redesign through benchmarking.
5. Understand the role of various activities involved order and delivery of a product in enterprise environment.

Pre-requisite : Nil


COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

INTRODUCTION

2Hours

The Manufacturing Enterprise, Traditional vs. Modern Enterprises.

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ARCHITECTURE OF A MANUFACTURING ENTERPRISE

10Hours

The Manufacturing Enterprise, Business Processes - Functional vs. Process-Centric Organization, Business Process Decomposition, Types of Processes, Interaction Among Processes, Competitive Strategy and Business Processes - Critical Business Processes, Resource Based View of an Enterprise.

ORGANIZATION STRUCTURE

7Hours

Types of Organization Structures - Functional Structure, Product Structure, Customer-Based Structure, Geography-Based Structure, Hybrid Structures, Matrix Structure, Process-Based Structure and The Network Organization, Choosing the Right Structure

PROCESS PERFORMANCE MEASURES

10 Hours

Introduction, Functional vs. Process Measures, Process Performance Measures, Lead Time - Process Redesign and Automation, Methods to Reduce Lead Time, Quality - Controlling the Variation, Capacity, Process Reliability, Dependability, Cost, Asset Utilization, Flexibility - Coping with Uncertainty, Flexibility in Business Processes.

PROCESS MEASUREMENT AND REDESIGN

8 Hours

Measures and Measurements - Measurements at the Work Process Level, Computation of Process-Level Measures and Balanced Scorecard, Process Benchmarking - History of Benchmarking, Types of Benchmarking, Benchmarking Process, Process Rating and Improvement - Rating Criteria, Process Levels, Process Redesign

ORDER-TO-DELIVERY PROCESS

10 Hours


Monitoring and Control of the ODP, Logistics - Information Systems in Logistics, Economic Issues, Information Sharing in an ODP and Best Practices - Vendor-Managed Inventories, Supplier Scheduling, JIT Purchasing, Interorganizational Information Systems, Performance Measures of an ODP - Customer Service, ODP Lead Time, ODP Costs, ODP Flexibility.

Theory: 45 Hrs


Total Hours: 45 Hrs

REFERENCES

1. Viswanadham, N. "Analysis of manufacturing enterprises: An Approach to Leveraging Value Delivery Processes for Competitive Advantage.", Springer (2000).
2. SHAHID MUJTABA, M. "Simulation modelling of a manufacturing enterprise with complex material, information and control flows." International journal of computer integrated manufacturing 7, no. 1 (1994): 29-46
3. Chryssolouris, George, Dimitris Mavrikios, and Dimitris Mourtzis. "Manufacturing systems: skills & competencies for the future." Procedia CIRP 7 (2013): 17-24.

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4. Dooley, Lawrence, Breda Kenny, and David O'Sullivan. "Innovation capability development: case studies of small enterprises in the LMT manufacturing sector." *Small Enterprise Research* 24, no. 3 (2017): 233-256.
5. Salmador Sánchez, María P., and M. Ángeles Palacios. "Knowledge-based manufacturing enterprises: Evidence from a case study." *Journal of manufacturing technology management* 19, no. 4 (2008): 447-468.
6. Sami El-Khasawneh, Bashar. "Challenges and remedies of manufacturing enterprises in developing countries: Jordan as a case study." *Journal of Manufacturing Technology Management* 23, no. 3 (2012): 328-350.
7. Marsh, Antony. "The implementation of enterprise resource planning systems in small-medium manufacturing enterprises in South-East Queensland: a case study approach." In *Management of Innovation and Technology, 2000. ICMIT 2000. Proceedings of the 2000 IEEE International Conference on*, vol. 2, pp. 592-597. IEEE, 2000.

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P18TME0015

QUALITY MANAGEMENT

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1: Demonstrate an understanding of various basic quality related concepts and Develop various quality statements and justify their interlinked characteristics.

CO2: Analyze the various quality philosophies and develop strategies to suit various environments to enhance quality aspects.

CO3: Select and apply statistical concepts for collecting and analyzing data to take decisions to improve and control quality.

CO4: Collect data on customer needs and convert it into metrics for achieving quality using appropriate tools.

CO5: Demonstrate an understanding of the underlying principles of various quality management systems.

Pre-requisite : Nil


COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

Introduction to quality management

5 Hours

Quality statement, customer perception of quality and quality costs, quality and profitability, benefits of quality, external and internal customers.

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Quality management philosophy

5Hours

Philosophy of Deming, Juran, Crosby, Ishikawa and Taguchi: 5 Pillars of TQM

Statistical Process, Seven QC Tools and Seven New Management Tools

13Hours

Statistical Process Control (SPC) – construction of control charts for variables and attributes, The seven QC tools and its applications, the seven new management tools and its applications.

Techniques for Quality Management

13 Hours

Quality Function Development (QFD): quality culture, quality strategy, vision statement, mission statement, goals, objectives, quality plan, quality assessment, quality function, and quality system. Demonstrate how to conduct a quality audit, Failure Mode and Effect Analysis (FMEA), Bench marking, POKA YOKE, Japanese 5S Principles, Concept of Continuous Improvement

Quality Management Systems

9 Hours

ISO Systems, TS 16949, Quality Council, Employee Involvement, Environment Management System (EMS).


Theory: 45 Hrs

Total Hours: 45 Hrs

REFERENCES

James R. Evans and William M. Lindsay, The management and Control of Quality, Sixth Edition, Thomson, 2010

1. Poornima M. Charantimath, Total Quality Management, Pearson Education, 2nd edition, 2012
2. Indian standard – Quality Management Systems – Guidelines for Performance Improvement (Fifth Revision), Bureau of Indian Standards, New Delhi.
Quality 101, ASQ's, Foundations in Quality, American Society for Quality. (Online Book)

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18TME0016 SUPPLY CHAIN MANAGEMENT

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO 1: Outline operations management environment and label the business information flows.

CO 2: Contrast logistics and supply chain management and infer the increasing significance of logistics.

CO 3: Model the elements of supply chain management and recall its recent trends.

CO 4: Analyze impact of inventory on supply chain management and discuss its major issues.

CO 5: List software packages involved in supply chain planning and model the various steps involved.

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

OPERATIONS MANAGEMENT BASICS


9 Hours

Operations Management definition – Transformation Role – Organizational charts - Manufacture versus service organizations – growth of service sectors – Operations management decisions – Historical development – Operations Management environment – Business information flow.

LOGISTICS OVERVIEW

9 Hours

Logistics versus Supply Chain Management – Contemporary Logistics terms – Logistics and Supply Chain Mission – Physical Distribution costs - Logistics Strategy and Planning – Logistics Strategy Triangle – Increasing significance of logistics – IT and Logistics.

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SUPPLY CHAIN MANAGEMENT OVERVIEW

9Hours

Supply Chain Overview - Goals and Importance of Supply Chain Management -Flows in a Supply Chain – Typical Supply Chains –Elements of Supply Chain Management – Strategies for Supply Chain Management – Trends in Supply Chain management – Global concerns.

SUPPLY CHAIN INVENTORY

9 Hours

Inventory and Inventory systems – Inventory positions in the supply chain – Reasons for inventories – Inventory and value – Functional roles of inventory – Reasons against inventory – Macro and micro issues in inventory management –Inventory management models - Planning supply chain activities.

SUPPLY CHAIN PLANNING

9 Hours


Dynamics of material flow – Dynamics of order flow – Supply chain planning – definitions, processes and decisions – Software packages – Planning results – Supply Chain Design – Mass customization – Design for Logistics – Supplier Base design.

Theory: 45 Hrs

Total Hours: 45 Hrs

REFERENCES

1. Janat Shah, Supply Chain Management – Text and Cases, Pearson Education, 5 th edition, 2012.
 2. Sunil Chopra and Peter Meind I, Supply Chain Management-Strategy Planning and Operation, PHI Learning / Pearson Education, 5 th edition, 2012.
- BOOKS:
3. Ballou Ronald H, Business Logistics and Supply Chain Management, Pearson Education, 5 th edition, 2013.
 4. David Simchi-Levi, Philip Kaminsky, Edith Simchi-Levi, Designing and Managing the Supply Chain: Concepts, Strategies, and Cases, Tata McGraw-Hill,3 rd edition, 2007.
 5. Altekar Rahul V, Supply Chain Management-Concept and Cases, PHI, 3 rd edition, 2005.
 6. Shapiro Jeremy F, Modeling the Supply Chain, Thomson Learning, Second Reprint, 2013.
 7. Joel D. Wisner, G. Keong Leong, Keah-Choon Tan, Principles of Supply Chain Management A Balanced Approach, South-Western, Cengage Learning, 3rd edition, 2011

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18TME0019

**DESIGN THINKING AND
INNOVATION MANAGEMENT**

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO 1: Outline the Creative thinking process

CO 2: Analyze the Problem Identification techniques

CO 3: Outline the process of Prototyping

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

CREATIVE THINKING :


11 Hours

Creative thinking, critical thinking and other types of thinking Creative people and creative Entrepreneurs, Ideas and tools to help both people and organizations work more creatively. Design Thinking and Why Is It important? Innovation and design thinking. The core concepts of design and innovation. How to build a design-led innovation culture. Managing the New Product Development Process using Design Thinking. A Detail Analysis of Design Thinking and Innovation

PROBLEM IDENTIFICATION

11 Hours

Tackle Wicked Problems .Obstacles to Problem Solving . Design Thinking as a Problem Solving tool,Learn to solve problem like a designer. How to use method template at every stage of your problem. Empathy in Design Thinking. The role of empathy in the design thinking process and the

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tools we can use. Empathize with Your Users. How do we learn what people want? How to employ ethnographic and analysis methods, such as interviews, focus groups, and surveys

FUZZY FRONT END OF INNOVATION AND IDEATION

11Hours

What is Ideation and Essential Ideation Techniques. Managing Fuzzy Front end of Innovation. Distributed creativity and Multidisciplinary approach How diversity and collaboration spur creativity in a workplace. Also mastering the powerful and versatile design thinking approach. Design Thinking as a holistic process , teach them how to integrates all stakeholders in order to create user-centric solutions The Design Sprint How to answer critical business questions through design, prototyping, and testing ideas with customers. run a Product Design Sprint

PROTOTYPING

12Hours

Why prototyping is so important in Design Thinking. How to prototype early and fast, as well as test your prototypes so as to reduce risks and accelerate organizational learning Embracing Failure Experiment to Innovate. Inculcate a culture that embrace failure. Teach students how to “Fail fast, fail cheap, fail often and Learn Fast Impact and purpose of this ideas. Present the ideas in this course together with the team and show how Start ups or entrepreneurs can create impact from ideas. Measuring impact and the value created through creativity.

Theory: 45 Hrs


Total Hours: 45 Hrs

REFERENCES

1. Design Thinking: Understanding How Designers Think and Work -- Nigel Cross
2. The Art of Innovation -- Tom Kelley
3. Creative Confidence: Unleashing the Creative Potential within us all -- Tom Kelley and David Kelley
4. Change by Design -- Tim Brown
5. The Design of Business -- Robert L. Martin

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3. DATA ANALYTICS

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P18ITE0021

**PROGRAMMING FOR DATA
ANALYTICS**

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1: Understand the data science process and basics of python

CO2: Understand the data structures provided by NumPy library for arrays and vectorized computation

CO3: Understand data structures provided by pandas library for data analysis

CO4: Do data wrangling, cleaning and transformation using python

CO5: Use Matplot lib for plotting and visualizing dataset

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

INTRODUCTION TO PYTHON

9 Hours

Data science process – roles, stages in data science project – Python Basics: Language Semantics – Scalar Types – Control Flow – Data Structures and Sequences – Functions – Lambda Functions

NUMPY BASICS: ARRAYS & VECTORIZED COMPUTATION

9 Hours

The NumPyndarray: A Multidimensional Array Object – Universal Functions: Fast Element-wise Array Functions – Data Processing Using Arrays - File Input and Output with Arrays – Linear Algebra – Random Number Generation – Random Walks

PANDAS

9Hours

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Introduction to pandas Data Structures – Essential Functionality – Summarizing and Computing Descriptive Statistics – Handling Missing Data – Hierarchical Indexing – Other pandas Topics

DATA LOADING, STORAGE, AND FILE FORMATS & DATA WRANGLING: CLEAN, TRANSFORM, MERGE, RESHAPE **9 Hours**

DATA LOADING, STORAGE, AND FILE FORMATS: Reading and Writing Data in Text Format – Binary Data Formats – Interacting with HTML and Web APIs – Interacting with Databases DATA WRANGLING: CLEAN, TRANSFORM, MERGE, RESHAPE Combining and Merging Data Sets – Reshaping and Pivoting – Data Transformation – String Manipulation – USDA Food Database


PLOTTING AND VISUALIZATION **9 Hours**

A Brief matplotlib API Primer – Plotting Functions in pandas – Plotting Maps: Visualizing Haiti Earthquake Crisis Data – Python Visualization Tool Ecosystem

Theory: 45 Hrs Total Hours: 45 Hrs

REFERENCES

1. Wes McKinney, "Python for Data Analysis", O'Reilly Media.2012
2. Sebastian Raschka, "Python Machine Learning", Packpub.com,2015
3. <https://www.datacamp.com/courses/statistical-thinking-in-python-part-1>

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P18ITE0022

MACHINE LEARNING AND APPLICATIONS

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

- CO1:** Identify current real world problems that can benefit from emerging machine learning techniques
- CO2:** Understand and apply supervised learning algorithms
- CO3:** Understand and apply Neural Networks algorithms.
- CO4:** Understand and apply unsupervised learning algorithms.
- CO5:** Understand the Recommendation systems
- CO6:** Evaluate and select machine learning models for a research or business problem.

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

MACHINE LEARNING VS STATISTICAL MODELING & SUPERVISED VS UNSUPERVISED LEARNING


9 Hours

Machine Learning Languages, Types, and Examples, Machine Learning vs Statistical Modelling, Supervised vs Unsupervised Learning, Supervised Learning Classification, Unsupervised Learning

SUPERVISED LEARNING

9Hours

K-Nearest Neighbors, Decision Trees, Random Forests, Reliability of Random Forests, Advantages &Disadvantages of Decision Trees, Regression Algorithms , Model Evaluation, Model Evaluation: Over fitting& Under fitting, Understanding Different Evaluation Models

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DEEP LEARNING

9 Hours

NN Architecture, Forward/Back propagation, vectorization, additional optimization tricks for neural networks

UNSUPERVISED LEARNING

9 Hours

.K-Means Clustering plus Advantages & Disadvantages, Hierarchical Clustering plus Advantages & Disadvantages, Measuring the Distances Between Clusters - Single Linkage Clustering, Measuring the Distances between Clusters - Algorithms for Hierarchy Clustering, Density-Based Clustering

DIMENSIONALITY REDUCTION & COLLABORATIVE FILTERING 9 Hours


.Dimensionality Reduction: Feature Extraction & Selection, Collaborative Filtering & Its Challenges

Theory: 45 Hrs

Total Hours: 45 Hrs

REFERENCES

1. <http://cs229.stanford.edu/syllabus.html>
2. Shai Ben-David and ShaiShalev- Shwartz,” Understanding Machine Learning: From Theory to Algorithms
3. Bishop, Christopher, “Pattern Recognition and Machine Learning”, Springer,2011.

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P18ITE0023 DATA AND VISUAL ANALYTICS

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1: Apply the best practices for information visualization

CO2: Store, Load, Transform and Visualize data using Big Data Technologies

CO3: Apply clustering techniques on data.

CO4: Apply classification techniques on data.

CO5: Understand the basic algorithms for analyzing graph.

CO6: Understand the basic algorithms for text and time series data.

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

INTRODUCTION


9 Hours

Big data analytics building blocks, Data Collection, simple storage (SQLite), Data cleaning

DATA VISUALISATION

9 Hours

Exploratory Data Analysis, Model of Human Visual Perception, Gestalt Psychology, Bar charts, scatterplots, and line charts, Color and Quantitative Data, Common visualization Issues & how to fix them, Data Visualization for web,

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BIG DATA TECHNOLOGIES

9Hours

Hadoop, Pig, Hive, Spark, Spark SQL, HBase

CLASSIFICATION AND CLUSTERING

9 Hours

.Classification key concepts, k-NN, cross validation, clustering: k-means, hierarchical clustering, DBSCAN decision tree, Ensemble method, bagging, random forests

GRAPH ANALYTICS, TEXT ANALYTICS AND TIME SERIES ANALYTICS

9 Hours


.Build and store graphs. Graph Centrality & algorithms, Text analytics: concepts, Text analytics: algorithms (LSI=SVD), Time series: basics, linear forecast, non-linear forecast, time series data visualization & applications

Theory: 45 Hrs

Total Hours: 45 Hrs

REFERENCES

1. <https://cse6242.gatech.edu/>
2. <http://poloclub.gatech.edu/cse6242/2018spring/>
3. <https://www.ev1.uic.edu/aej/424/>
4. <https://people.cs.umass.edu/~ggrinstein/CS690V.pdf>
5. Sang C. Suh , Thomas Anthony, "Big Data and Visual Analytics 1st ed. 2017 , Kindle Edition"

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P18TME0041

**DATA SCIENCE
AND ANALYTICS**

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1: Understand roles and stages of data science project and manage the size of data

CO2: Explain various machine learning algorithm for analytics project

CO3: Identify and design and write functions in R and implement simple iterative algorithms

CO4: Explain significance of Big data analytics and technologies

CO5: Demonstrate map reduce framework for simple dataset

CO6: Explain various delivering method for analysis process

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

INTRODUCTION TO DATA SCIENCE

9 Hours

What is data sciences-The rising and importance of data sciences - Big data analytics in industry verticals - Data science process – roles, stages in data science project – working with data from files – working with relational databases – exploring data – managing data – cleaning and sampling for modeling and validation

MODELING METHODS

9 Hours

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Choosing and evaluating models – mapping problems to machine learning, evaluating clustering models, validating models – cluster analysis – K-means algorithm, Naïve Bayes – Memorization Methods – Linear and logistic regression – unsupervised methods

INTRODUCTION TO R

9 Hours

Reading and getting data into R – ordered and unordered factors – arrays and matrices – lists and data frames – reading data from files – probability distributions – statistical models in R - manipulating objects – data distribution

MAP REDUCE

9 Hours

.Introduction – distributed file system – algorithms using map reduce, Matrix-Vector Multiplication by Map Reduce – Hadoop - Understanding the Map Reduce architecture - Writing Hadoop Map Reduce Programs - Loading data into HDFS - Executing the Map phase - Shuffling and sorting - Reducing phase execution.

DELIVERING RESULTS

9 Hours


Documentation and deployment – producing effective presentations – Introduction to graphical analysis – plot() function -Histograms and Density Charts- Starting Layer Tips- Using Facets- Coordinates- Perfecting By Adding Themes – displaying multivariate data – matrix plots – multiple plots in one window - exporting graph - using graphics parameters- Time Series Analysis-Additive & Multiplicative models - Exponential smoothing techniques- Case studies.

Theory: 45 Hrs

Total Hours: 45 Hrs


REFERENCES

1. NinaZumel,JohnMount,“PracticalDataSciencewithR”,ManningPublication s, 2014.
2. Jure Leskovec, Anand Rajaraman, Jeffrey D. Ullman, “Mining of Massive Datasets”, Cambridge University Press,2014.
3. Mark Gardener, “Beginning R - The Statistical Programming Language”, John Wiley & Sons, Inc.,2012.
4. Nathan Yau, “Visualize This: The FlowingData Guide to Design, Visualization, and Statistics”, Wiley,2011.
5. Boris lublinsky, Kevin t. Smith, Alexey Yakubovich, “Professional Hadoop Solutions”, Wiley, ISBN: 9788126551071, 2015.
6. Eric Siegel, Thomas H. Davenport, “Predictive Analytics: The Power to Predict Who Will Click, Buy, Lie, or Die”, Wiley, 2013

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WEB REFERENCES

1. http://www.johndcook.com/R_language_for_programmers.html
2. <http://bigdatauniversity.com/>
3. <http://www.michael-noll.com/tutorials/running-hadoop-on-ubuntu-linux-single-node-cluster/>

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P18TME0042

**CLOUD SERVICES AND
VIRTUALIZATION**

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

- CO1: Deploy legacy OSs on virtual machines.
- CO2: Distinguish the intricacies of server, storage, network, desktop and application virtualizations.
- CO3: Compare full and para virtualization.
- CO4: Producing cloud applications in virtual machine platforms.

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

INTRODUCTION

9Hours

Introduction - Essentials - Benefits - Business and IT Perspective - Cloud and Virtualization -Cloud Services Requirements - Cloud and Dynamic Infrastructure - Cloud Computing Characteristics - Cloud Adoption. Cloud Models - Cloud Characteristics - Measured Service - Cloud Models - Security in a Public Cloud - Public versus Private Clouds - Cloud Infrastructure Self Service.

CLOUD SERVICES AND SOLUTIONS


9 Hours

Principal Technologies - Cloud Strategy - Cloud Design and Implementation using SOA - Conceptual Cloud Model - Cloud Service Defined. Cloud Solutions - Introduction - Cloud Ecosystem - Cloud Business Process Management - Cloud Service Management - Cloud Stack - Computing on Demand (CoD) – Cloud sourcing.

CLOUD OFFERINGS AND CLOUD MANAGEMENT

9 Hours

Cloud Offerings - Information Storage, Retrieval, Archive and Protection - Cloud Analytics - Testing under Cloud - Information Security - Virtual Desktop Infrastructure - Storage Cloud. Cloud Management -

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Resiliency - Provisioning - Asset Management - Cloud Governance - High Availability and Disaster Recovery - Charging Models, Usage Reporting, Billing and Metering

COUD ENABLING TECHNOLOGIES

9 Hours

.Data center Technology – Virtualization Technology – Web Technology – Multitenant Technology – service technology – case study in AWS.

CLOUD VIRTUALIZATION

9Hours


.Virtualization Defined - Virtualization Benefits - Server Virtualization - Virtualization for x86 Architecture - Hypervisor Management Software - Logical Partitioning (LPAR) - VIO Server - Virtual Infrastructure Requirements - Storage virtualization - Storage Area Networks - Network-Attached storage - Cloud Server Virtualization - Virtualized Data Center.

Theory: 45 Hrs


Total Hours: 45 Hrs

REFERENCES

1. Kumar Saurabh, Cloud Computing: Insights into New-Era Infrastructure, Wiley India, 2011.
2. John Rhoton, Cloud Computing Explained: Implementation Handbook for Enterprises, Recursive Press, 2013.
3. Zaigham Mahmood, Thomas Erl, Ricardo Puttini, Cloud Computing: Concepts, Technology & Architecture, Prentice hall, 2013.
4. James E. Smith, Ravi Nair, - Virtual Machines: Versatile Platforms for Systems and Processes, Elsevier/Morgan Kaufmann, 2005.
5. David Marshall, Wade A. Reynolds, - Advanced Server Virtualization: VMware and Microsoft Platform in the Virtual Data Center, Auerbach Publications, 2006.
6. Kumar Reddy, Victor Moreno, - Network virtualization, Cisco Press, July, 2006.
7. Chris Wolf, Erick M. Halter, - Virtualization: From the Desktop to the Enterprise, Apress 2005.
8. Danielle Ruest, Nelson Ruest - Virtualization: A Beginner's Guide, TMH, 2009
9. Thomas Erl, Zaigham Mahmood, Ricardo Puttini, —Cloud Computing: Concepts, Technology and Architecture||, Prentice Hall Service Technology Series, 2013
10. Kenneth Hess , Amy Newman: Practical Virtualization Solutions: Virtualization from the Prentice Hall 2010
11. John Rittinghouse, James Ransome, Cloud Computing, Implementation, Management and Strategy, CRC Press, 2010

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5. INFORMATION TECHNOLOGY

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P18ITE0024

**ADVANCED CONCEPTS IN
CLOUD COMPUTING**

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1: Develop private cloud using tools

CO2: Identify cloud service and its applications

CO3: Illustrate basic architecture of cloud infrastructure

CO4: Apply virtualization concepts for real time problems

CO5: Discuss various security and standard in cloud computing

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

CLOUD INTRODUCTION


9Hours

Cloud Computing Fundamentals: Cloud Computing definition, Types of cloud, Cloud services: Benefits and challenges of cloud computing, Evolution of Cloud Computing , usage scenarios and Applications , Business models around Cloud – Major Players in Cloud Computing - Issues in Cloud - Eucalyptus - Nimbus - Open Nebula, Cloud Sim

CLOUD SERVICES AND FILE SYSTEM

9 Hours

Types of Cloud services: Software as a Service - Platform as a Service – Infrastructure as a Service - Database as a Service - Monitoring as a Service – Communication as services. Service providers- Google

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App Engine, Amazon EC2, Microsoft Azure, Sales force. Introduction to Map Reduce, GFS, HDFS, Hadoop Framework

CLOUDINFRASTRUCTURE

9 Hours

Architectural Design of Compute and Storage Clouds – Layered Cloud Architecture Development – Design Challenges - Inter Cloud Resource Management – Resource Provisioning and Platform Deployment – Global Exchange of Cloud Resources

VIRTUALIZATION FOR CLOUD

9 Hours

.Need for Virtualization – Pros and cons of Virtualization – Types of Virtualization – System Vm, Process VM, Virtual Machine monitor – Virtual machine properties - Interpretation an and binary translation, HLL VM - Hypervisors – Xen, KVM , VMWare, Virtual Box, Hyper-V.

SECURITY, STANDARDS, AND APPLICATION

9Hours


Security in Clouds: Cloud security challenges – Software as a Service Security, Common Standards: The Open Cloud Consortium – The Distributed management Task Force – Standards for application Developers – Standards for Messaging – Standards for Security, End user access to cloud computing, Mobile Internet devices and the cloud binary translation.

Theory: 45 Hrs

Total Hours: 45 Hrs

REFERENCES

1. Kumar Saurabh, Cloud Computing: Insights into New-Era Infrastructure, Wiley India, 2011.
2. John Rhoton, Cloud Computing Explained: Implementation Handbook for Enterprises, Recursive Press, 2013.
3. ZaighamMahmood, Thomas Erl, Ricardo Puttini, Cloud Computing: Concepts,Technology & Architecture, Prentice hall, 2013.
4. James E. Smith, Ravi Nair, - Virtual Machines: Versatile Platforms for Systems and Processes, Elsevier/Morgan Kaufmann, 2005.
5. David Marshall, Wade A. Reynolds, - Advanced Server Virtualization: VMware and Microsoft Platform in the Virtual Data Center, Auerbach Publications, 2006.

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P18ITE0025 CONCEPTS IN CYBER SECURITY

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1: Describe the computer security fundamentals

CO2: Describe the secure system planning and administration

CO3: Understand the Information security policies and procedures

CO4: Acquire the knowledge of information security and management standards

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

Introduction to Computer Security

9 Hours

Introduction to Computer Security: Definition, Threats to security, Government requirements, Information Protection and Access Controls, Computer security efforts, Standards, Computer Security mandates and legislation, Privacy considerations, International security activity.


Secure System Planning and administration,

9 Hours

Secure System Planning and administration, Introduction to the orange book, Security policy requirements, accountability, assurance and documentation requirements, Network Security, The Red book and Government network evaluations.

Information security policies and procedures

9Hours

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Information security policies and procedures: Corporate policies- Tier 1, Tier 2 and Tier3 policies - process management-planning and preparation-developing policies-asset classification policy developing standards

Information security: 9 Hours

Information security: fundamentals-Employee responsibilities- information classification Information handling- Tools of information security- Information processing-secure program administration.

Organizational and Human Security 9 Hours


Organizational and Human Security: Adoption of Information Security Management Standards, Human Factors in Security- Role of information security professionals

Theory: 45 Hrs

Total Hours: 45 Hrs

REFERENCES

1. Debby Russell and Sr. G. T Gangemi, "Computer Security Basics (Paperback)", 2nd Edition, O' Reilly Media, 2006.
2. Thomas R. Peltier, "Information Security policies and procedures: A Practitioner's Reference", 2nd Edition Prentice Hall, 2004.
3. Kenneth J. Knapp, "Cyber Security and Global Information Assurance: Threat Analysis and Response Solutions", IGI Global, 2009.
4. Jonathan Rosenoer, "Cyber law: the Law of the Internet", Springer-verlag, 1997
5. James Graham, Richard Howard and Ryan Olson "Cyber Security Essentials" CRC Press, Taylor & Francis Group, 2010.

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P18ITE0026

**PROJECTS IN SOFTWARE
ENGINEERING**

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1: An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, safety, and sustainability.

CO2: Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.

CO3: An ability to identify, formulate, and solve engineering problems and understand professional and ethical responsibility.

CO4: Demonstrate a knowledge and understanding of management and business practices, such as risk and change management, and understand their limitations

CO5: An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Pre-requisite : Nil


COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

**SOFTWARE ENGINEERING PROCESS & PROJECT
MANAGEMENT**

9 Hours

Introduction – The Software problem – Software Engineering Problem – Software Engineering Approach – Summary – Software Process – Characteristics of a Software Process – Software Development

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Process – Project Management Process – Software Configuration Management Process – Process Management Process

SOFTWARE REQUIREMENT ANALYSIS

9 Hours

Software Requirements Analysis and Specification – Software Requirements – Problem Analysis – Requirements Specification – Validation – Metrics.

SOFTWARE PROJECT SCHEDULING & RISK MANAGEMENT

9Hours

Planning a Software Project – Cost Estimation – Project Scheduling – Staffing and Personnel Planning – Software configuration Management Plans – Quality Assurance Plans – Project Monitoring Plans – Risk Management.

SOFTWARE DESIGN

9 Hours

Function-oriented Design – Design Principles – Module-Level Concepts – Design Notation and Specification – Structured Design – Methodology – Verification – Metrics – Detailed Design – Module specifications – Detailed Design – Verification – Metrics.

SOFTWARE TESTING & ESTIMATION

9 Hours


Coding – Programming Practice – Top-down and Bottom-up - structured programming – Information Hiding – Programming style – Internal Documentation Verification – Code Reading – Static Analysis – Symbolic Execution – Code Inspection or Reviews – Unit Testing – Metrics – Summary Testing – Fundamentals – Functional Testing versus structural Testing – Metrics – Reliability Estimation

Theory: 45 Hrs


Total Hours: 45 Hrs

REFERENCES

1. PankajJalote, “An Integrated Approach to Software Engineering”, Narosa Publishing House, Delhi, 2000.
2. Pressman R.S., “Software Engineering”, Tata McGraw Hill Pub. Co., Delhi, 2000. 2. Sommerville, “Software Engineering”, Pearson Education, Delhi, 2000.
3. Watts S.Humphrey, “Managing the Software Process”, SEI Services in Software Engineering, Addison Wesley Longman, 2000.
4. Ian Sommerville, “Software Engineering”, 6th Edition, Pearson Education, 2003.

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6. HEALTH INFORMATICS AND MANAGEMENT

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P18TME0031

Healthcare Systems

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

CO1: To understand the basics of healthcare and components of healthcare system

CO2 To classify healthcare delivery system

CO3: To understand the basics of healthcare diagnostics equipment

CO4: To develop solutions for addressing management problems in health care organizations

CO5: To analyze and integrate health care management with real world situations

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.Mid Term Assessment 2.Assignment/ Presentation /Poster Preparations/Prototype or Product Demonstration 3.End Semester Examination
INDIRECT
1.Course-end survey

INTRODUCTION TO HEALTHCARE SECTOR


9 Hours

Introduction & Overview – Healthcare system models and types; medical and wellness models of health; Components of the health care industry- Healthcare professionals and Biomedical instrumentation; Types of healthcare delivery system; Role and function of the governing board, medical staff, and hospital administration; Recent health reform efforts

BASICS OF HEALTH CARE INSTRUMENTATION

9 Hours

Instruments for diagnostic, therapeutic, and assistive purpose. Ventricular Defibrillator, Electro-Cardiogram (ECG), X-ray radiography, and Computed Tomography (CT). Generalized medical instrumentation system.

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Transducers and measurement of physiological events. Mechanical transducer, Displacement transducer, Force transducer, Displacement transducers, Strain gauges. Thermo couplers –Thermo resistors, Thermistors, and Photoelectric transducers and Chemical Bio potentials, Bio electrodes and biosensors.

HEALTH CARE ETHICS AND HEALTH INSURANCE 9Hours

Patient and Provider rights; Legal and ethical concerns in managed care; Beginning and end-of-life care; Ethical rationale for health care reform; HIPPA-Health insurance Portability and Accountability Act; Medicare-Overview; Preferred Provider Organizations: Performance and Problems

REHABILITATION AND HEALTH CARE SYSTEM 9 Hours

Human movement and locomotion. Disorders of limb, trunk, and Neck. Rehabilitation of injuries and mobility disorders. Prosthetics and orthotics- Lower limb orthotics, upper limb prosthetics and orthotics. Trunk and Neck orthotics. Assistive technologies in rehabilitation. Mobility and Inclusive design.


HEALTHCARE MANAGEMENT AND CASE STUDIES 9 Hours

Healthcare management guidelines; Team structure and process for completion; Mergers and changes

Theory: 45 Hrs Total Hours: 45 Hrs

REFERENCES

1. Buchbinder, S.B., & Shanks, N.H. (2012). Introduction to Health Care Management. Jones & Bartlett, Publishers, 2nd Edition
2. Kidder, Peabody and Company, Hospital Management Industry, Part I, November 1984
3. Jon Gabel and Dean Ermann, A Preferred Provider Organizations: Performance, Problems, and Promise, @ Health Affairs, Spring, 1985
4. Handbook of Biomedical Instrumentation, R.S. Khandpur, 1987, McGraw-Hill Education, ISBN 9789339205423.
5. An Introduction to Rehabilitation Engineering, Rory A Cooper, 2006, Taylor & Francis Ltd, ISBN: 9780849372223
6. Kathleen Lohr and M. Susan Marquis, "Medicare and Medicaid: Past, Present and Future," RAND note prepared for U.S. Dept. of Health and Human Services, May 1984

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P18TME0032

Healthcare Informatics

L	T	P	J	C
3	0	0	0	3

Course Outcomes

After successful completion of this course, the students should be able to

- CO1: To understand the basics of healthcare and standards of healthcare information
- CO2 To have an in-depth knowledge on information system cycles
- CO3: To understand the basic of database management and ER model
- CO4: To inculcate with the overview of decision system in healthcare informatics.
- CO5: To introduce big data analytics in healthcare

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.MID Term Test 2.Assignment; Presentation 3.End Semester Examination
INDIRECT
1.Course-end survey

INTRODUCTION TO HEALTHCARE SYSTEMS

9 HOURS

Introduction & Overview - Health information technology, standards and vocabularies; Critical Assessment in healthcare informatics standards; Healthcare information – privacy, confidentiality and ethics. Role of healthcare professional; Strategies for achieving national goals for use of health Information technology.

INFORMATION SYSTEM IN HEALTHCARE

9 HOURS

History; Information systems cycle ; Project failures; Enhancing data resources; application of health informatics to improving patient safety and outcomes


DATABASE MANAGEMENT & EVIDENCE-BASED MANAGEMENT SYSTEM

9 HOURS

Introduction to database – relational database, database management, database design and entity relationship model; Healthcare informatics – research, data to evidence based management system; Improving healthcare delivery through patient informatics and quality centric data; Informatics blueprint for quality information systems.

DECISION SUPPORT SYSTEMS AND ELECTRONIC HEALTH RECORDS

9 HOURS

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The process of decision making – evidence based medicine, practice; Quality of evidence in healthcare informatics; Utilization of Medical Imaging informatics and biometrics technologies in healthcare delivery; Use of information to set standards; Transformation of information to practice; EHR – Function, Human factors, EHR implementation

BIG-DATA ANALYTICS IN HEALTHCARE 9 HOURS

Data mining in Healthcare; Using data mining to build alerting systems for decision support in healthcare; Implementation of analytics systems in healthcare; Case study: Data mining techniques to enhance healthcare cost saving and optimization of care enhancement services.

Theory: 45 Hrs Total Hours: 45Hrs

REFERENCES

1. Zielinski, Krzysztof, MariuszDuplaga, and David Ingram. Information technology solutions for healthcare. Springer Science & Business Media, 2007.
2. Lazakidou, A. A. (Ed.). (2006). Handbook of research on informatics in healthcare and biomedicine. IGI Global.
3. Hebda, T., Czar, P., & Mascara, C. (2005). Handbook of informatics for nurses and health care professionals. Prentice Hall.
4. Hanson, C. W. (2005). Healthcare informatics. McGraw-Hill Medical Publishing Division.
5. Coble, D. (2001). Informatics for Healthcare Professionals. CIN: Computers, Informatics, Nursing, 4(3), 3.
6. Other references
7. Huang, H. K. (2008). Utilization of medical imaging informatics and biometrics technologies in healthcare delivery. International Journal of Computer Assisted Radiology and Surgery, 3(1-2), 27-39.
8. Korpman, R. A., & Dickinson, G. L. (1998). Critical assessment of healthcare informatics standards. International journal of medical informatics, 48(1-3), 125-132.
9. Reiner, B. I. (2011). Improving healthcare delivery through patient informatics and quality centric data. Journal of digital imaging, 24(2), 177-178.
10. Wan, T. T. (2006). Healthcare informatics research: from data to evidence-based management. Journal of Medical Systems, 30(1), 3-7.
11. Niland, J. C., Rouse, L., & Stahl, D. C. (2006). An informatics blueprint for healthcare quality information systems. Journal of the American medical informatics association, 13(4), 402-417.

P18TME0033

L	T	P	J	C
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ADVANCED HEALTHCARE MANAGEMENT

3	0	0	0	3
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Course Outcomes

After successful completion of this course, the students should be able to

CO1: To provide fundamental background necessary for a leadership position in health care.

CO2 Understanding Indian health care system outcomes, financing and administrative structure compared to other international health care systems with the goal of concept integration

CO3: The regulatory and legal structure of the Indian health care system affects administrative and management decisions

CO4: Administrative aspects of health care administrative and management to include human resources, marketing, ethics, planning, information systems

Pre-requisite : Nil

COURSE ASSESSMENT METHODS

DIRECT
1.MID Term Test 2.Assignment; Presentation 3.End Semester Examination
INDIRECT
1.Course-end survey

Healthcare systems and interface


10 hours

International Healthcare systems, Indian Healthcare systems, Organized Delivery Systems and Health Care Reform, Legal structure and ethical issues in health care. Strategic planning and understanding of strategic stakeholders in health care.

Administrative structure of Healthcare systems

11Hours

Administrative and management engineering (Q/A, Q/C, cost containment etc). Financial management in health care. Health care information systems. Planning, development and financing of health care facilities. Marketing health care services. Healthcare organization and management. Compliance programs. Patient Access and Human Resources Management.

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Finance Management in Healthcare systems

12Hours

Interface between public health and Indian Health care systems, Organization and System framework of health services in India. Types and Providers of Health Services, and Technology Resources.

Healthcare services


12 Hours

The Strategic Management of Human Resources, Managing Healthcare Professionals, Managing Costs & Revenues, Financing Health Care. Business aspects of healthcare management : marketing, technology, business planning, Social entrepreneurship in healthcare, New Healthcare Start-up, Current Research – Globalization and health, The promises and pitfalls of big data in health care management, Competitive Strategy in the Health Care Context, How health care is different from other sectors of the economy

Theory: 45 Hrs Total Hours: 45Hrs

REFERENCES

1. Walshe, K., & Smith, J. (Eds.). (2011). Healthcare management. McGraw-Hill Education (UK).
2. Medicare Payment Advisory Commission, & Book, A. D. (2012). Healthcare spending and the Medicare program. Washington, DC: MedPAC.
3. Gapenski, L. C., & Pink, G. H. (2007). Understanding healthcare financial management. Chicago: Health Administration Press.
4. Reid, P. P., Compton, W. D., Grossman, J. H., & Fanjiang, G. (2005). Building a better delivery system: a new engineering/health care partnership (Vol. 2005, pp. 1-7). Washington, DC: National Academies Press.
5. Alden, K. R., Lowdermilk, D. L., Cashion, M. C., & Perry, S. E. (2013). Maternity and women's health care-E-book. Elsevier Health Sciences

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