



**JSS MAHAVIDYAPEETHA**  
**JSS SCIENCE AND TECHNOLOGY UNIVERSITY, MYSURU**  
**SRI JAYACHAMARAJENDRA COLLEGE OF ENGINEERING, MYSURU**

**M.TECH PROGRAMME IN**  
**MASTER OF ENGINEERING MANAGEMENT**

**SCHEME I TO IV SEMESTER: 2017-2018**

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**SYLLABUS I TO IV SEMESTER: 2017-2018**

**DEPARTMENT OF MECHANICAL ENGINEERING**  
**Scheme of Teaching and Examination for M.Tech (MEM)**

**JSS MAHAVIDYAPEETHA**  
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**DEPARTMENT OF MECHANICAL ENGINEERING**  
**Scheme of Teaching and Examination for M.Tech(MEM)**

<b>SEMESTER</b>	<b>CREDITS</b>
<b>I</b>	<b>28</b>
<b>II</b>	<b>28</b>
<b>III</b>	<b>18</b>
<b>IV</b>	<b>26</b>
<b>TOTAL</b>	<b>100</b>

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**Scheme of Teaching and Examination for M.Tech (MEM)**

**SEMESTER: I**

<b>SEMESTER I</b>											
<b>Sl. No.</b>	<b>Subject code</b>	<b>Course Name</b>	<b>Credits</b>				<b>Contact Hours Per Week</b>	<b>Marks</b>		<b>Total</b>	<b>Exam Duration in Hrs.</b>
			<b>L</b>	<b>T</b>	<b>P</b>	<b>Total</b>		<b>CIE</b>	<b>SEE</b>		
1	<b>MEM 110</b>	Marketing Management	4	1	-	5	6	50	50	100	3
2	<b>MEM 120</b>	Quantitative techniques	4	1	-	5	6	50	50	100	3
3	<b>MEM 130</b>	Operations Management	4	1	-	5	6	50	50	100	3
4	<b>MEM 14X</b>	Elective – I	4	1	-	5	6	50	50	100	3
5	<b>MEM 15X</b>	Elective – II	4	1	-	5	6	50	50	100	3
6	<b>MEM 16L</b>	Data analytics Lab	-	-	1.5	1.5	3	50	-	50	-
7	<b>MEM 170</b>	General Seminar	-	-	-	1.5	3	50	-	50	-
<b>TOTAL</b>						<b>28.0</b>	<b>36</b>			<b>600</b>	

<b>Elective – I</b>	
<b>MEM 141</b>	Human Resources Management.
<b>MEM 142</b>	Total Quality Management.
<b>MEM 143</b>	Industrial Relations.
<b>Elective – II</b>	
<b>MEM 151</b>	Managerial Economics.
<b>MEM 152</b>	Computer Application in Management.
<b>MEM 153</b>	Knowledge Management.

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**SEMESTER: II**

<b>SEMESTER II</b>											
Sl. No.	Subject code	Course Name	Credits				Contact Hours Per Week	Marks		Total	Exam Duration in Hrs.
			L	T	P	Total		CIE	SEE		
1	<b>MEM 210</b>	Supply Chain Management	4	1	-	5	6	50	50	100	3
2	<b>MEM 220</b>	Project management	4	1	-	5	6	50	50	100	3
3	<b>MEM 230</b>	Organization Behavior	4	1	-	5	6	50	50	100	3
4	<b>MEM 24X</b>	Elective – III	4	1	-	5	6	50	50	100	3
5	<b>MEM 25X</b>	Elective – IV	4	1	-	5	6	50	50	100	3
6	<b>MEM 26L</b>	Data synthesis lab	-	-	1.5	1.5	3	50	-	50	-
7	<b>MEM 270</b>	General Seminar	-	-	1.5	1.5	3	50	-	50	-
<b>TOTAL</b>						<b>28.0</b>	36			600	

<b>Elective – III</b>	
<b>MEM 241</b>	Industrial Marketing.
<b>MEM 242</b>	Advertisement and Publicity.
<b>MEM 243</b>	Energy Management.
<b>Elective – IV</b>	
<b>MEM 251</b>	Advanced Operations Research.
<b>MEM 252</b>	Maintenance Engineering and management.
<b>MEM 253</b>	Product Data Management.

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**SEMESTER: III**

<b>SEMESTER III</b>											
<b>Sl. No</b>	<b>Subject Code</b>	<b>Course Name</b>	<b>Credits</b>				<b>Contact Hours Per week</b>	<b>Marks</b>		<b>Total</b>	<b>Exam Duration in Hrs</b>
			<b>L</b>	<b>T</b>	<b>P</b>	<b>Total</b>		<b>CIE</b>	<b>SEE</b>		
1	MEM310	Practical Training in Industry/ Exploration Research	0	0	4	4	8 Weeks Duration	100	-	100	-
2	MEM320	Project Work (Phase I)	0	0	14	14		100	-	100	-
<b>Total Credits</b>						<b>18</b>		<b>Total Marks</b>		<b>200</b>	

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**SEMESTER: IV**

<b>SEMESTER IV</b>											
<b>Sl. No.</b>	<b>Subject Code</b>	<b>Course Name</b>	<b>Credits</b>				<b>Contact Hours Per week</b>	<b>Marks</b>		<b>Total</b>	<b>Exam Duration in Hrs</b>
			<b>L</b>	<b>T</b>	<b>P</b>	<b>Total</b>		<b>CIE</b>	<b>SEE</b>		
1	MEM410	Project Work (Phase II)	0	0	26	26	--	100	200	300	3
<b>Total Credits</b>						<b>26</b>		<b>Total Marks</b>		<b>300</b>	

**MARKETING MANAGEMENT**

<b>Subject Code</b>	<b>MEM110</b>	<b>No. of Credits</b>	<b>4 - 1 - 0</b>
<b>No. of Lecture Hours / Week</b>	<b>04 + 02</b>	<b>Exam Hours</b>	<b>3</b>
<b>Total No. of Contact Hours</b>	<b>52 + 26</b>	<b>Exam Marks</b>	<b>100</b>

**Course objectives:**

1. To analyze with a critical appreciation of marketing from both academic and practitioner perspectives.
2. To apply the theoretical foundations of marketing alongside current and emerging practitioner in management.
3. To analyze marketing decisions and consumer behavior.
4. To apply competence and creativity to address marketing issues through flexible, adaptable and innovative approaches towards marketing goals.
5. To estimate the need for customer orientation in the competitive global business environment.

**Course outcomes:**

**At the end of the course the students shall have the abilities to:**

<b>CO1</b>	Identify and describe the key marketing concepts, theories and techniques for analyzing a variety of marketing situations and demonstrate the dynamic nature of the environment in which marketing decisions are made and implemented.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO2</b>	Describe, analyze and evaluate the role of consumers as purchasers and users of goods and services in consumer markets, organizational markets and Government markets.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO3</b>	Identify, describe, analyze and evaluate market segments and targets during the various stages of the PLC along with the new product development process.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

<b>CO4</b>	Formulate pricing strategies for product and services and discuss the management of brands and packaging.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO5</b>	Describe and analyze integrated marketing communications plan which includes promotional strategies, the unique marketing mixes and selling propositions for specific product offering.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

### Course content

#### UNIT-1

**Introduction to Marketing Management:** Role of marketing in today's organizations – core concepts of marketing – management - the evolution of marketing management concept. Marketing Mix.

**Marketing Environment:** Marketing system – actors in the company's Micro and Macro Environment. **16 Hrs**

#### UNIT-2

**Consumer Markets And Buying Behaviors** –A Model of consumer behavior – Major factors influencing consumer behavior – the buying decision process.

**Organizational Markets And Buying Behavior** –the industrial market – the reseller market – the government market. **16 Hrs**

#### UNIT-3

**Market Segmentation – Market Targeting – Market Positioning**– the marketing plan.

**Concept Of Product Life Cycle.**-Different stages in the PLC, Different strategies in the stages of PLC. **New Product Development Process-** Eight successive Stages in the new product development process. **15 Hrs**

#### UNIT-4

**Pricing and Channel Decisions** –The pricing objectives, methods and steps. Channel types, selection of appropriate channel.

**Product Branding and Packaging Decisions-** Branding decisions; Family brands, multi brand decisions, Brand extensions Packaging decisions, labeling decisions. **16 Hrs**



## UNIT-5

**Communication and Promotion Mix Decision-**Steps in developing effective communication, Promoting products through Advertising, Personal selling, publicity and sales promotion.

**15 Hrs**

**Text Books:**

1. Marketing Management: analysis, planning and control – Philip Kotler – PHI.

**Reference Books:**

1. Marketing Management – Stanton – John Wiley.

### Course Articulation Matrix

CO	CO	PO s and PSO s Mapping														
		PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	PSO	PSO
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
Total																

CO	CO	PO s and PSO s Attainment														
		PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	PSO	PSO
CO																
CO																
CO																
CO																
CO																
Total																
Attainment																

**QUANTITATIVE TECHNIQUES**

<b>Subject Code</b>	<b>MEM120</b>	<b>No. of Credits</b>	<b>4 - 1 - 0</b>
<b>No. of Lecture Hours / Week</b>	<b>04 + 02</b>	<b>Exam Hours</b>	<b>3</b>
<b>Total No. of Contact Hours</b>	<b>52 + 26</b>	<b>Exam Marks</b>	<b>100</b>

**Course objectives:**

1. To apply knowledge of mathematics and statistics to the defined procedures, processes, systems and methodologies.
2. To identify and analyze broadly defined manufacturing and design problems and reach out to substantial solutions through mathematical and analytical tools.
3. To evaluate, validate and infer through standard codes and practices of specific problems and provide solutions.
4. To select and use appropriate statistical application packages to provide solutions with a comprehensive understanding of feasibility and limitations.
5. To analyze the findings of statistical solutions arrived at, using proper charts, tables and other presentation techniques.

**Course outcomes:**

**At the end of the course the students shall have the abilities to:**

<b>CO1</b>	Apply knowledge of mathematics and statistics to the defined procedures, processes, systems and /or methodologies.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO2</b>	Identify and analyze broadly defined manufacturing and design problems and reach out to substantial solutions through mathematical and analytical tools.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO3</b>	Conduct investigations of specific problems through relevant standard codes and practices and provide solutions through validated inferences.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

<b>CO4</b>	Select and use appropriate statistical application packages to provide solutions with a comprehensive understanding of feasibility and limitations.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO5</b>	Present the findings of statistical solutions arrived at, using proper charts, tables and other presentation techniques.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

## Course Content

### UNIT – 1

**Introduction:** Arranging data, frequency distributions, graphing frequency distributions.

**Measures of Central tendency:** Definition, objectives, types and application of: Mean, median, mode. **Measures of Dispersion:** The idea of dispersion, the range, the quartile deviation, the mean deviation, the standard deviation, the coefficient of variation, Skewness and Kurtosis.

**16 Hrs**

### UNIT – 2

**Probability:** The concept, types of probabilities, Laws of probability, Probabilities under statistical independence & dependence, conditional probability & Baye's theorem.

**Probability distributions:** Concept, Discrete and continuous probability distributions, Binomial, Poisson, Poisson as an approximation to binomial and Normal distributions.

**16 Hrs**

### UNIT –3

**Sampling:** Types of sampling, sampling distributions, **Estimation:** Point & interval estimates, Features of a good estimator, Confidence intervals for mean & proportion, sample size determination.

**15 Hrs**

### UNIT – 4

**Testing of hypothesis:** Hypothesis testing of mean and proportion & for differences between means & proportions, Chi-square test for independence & goodness of fit -Analysis of variance.

**15 Hrs**

### UNIT - 5

**Correlation and Regression:** Introduction, Scatter diagram and types of correlation,

Estimation using least square regression, Standard error of estimate and prediction intervals,  
Coefficient of determination, Correlation coefficient. **16 Hrs**

**Reference Books:**

1. S.C. Gupta & V. K. Kapoor, "Fundamentals of Mathematical Statistics", Sultan Chand & sons publishers, 1987.
2. Richard I. Levin, "Statistics for management", Prentice-Hall of India Private Limited, 1990.

**Course Articulation Matrix**

CO	CO	PO s and PSO s Mapping														
		PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	PSO	PSO	PSO
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
Total																

		PO s and PSO s Attainment														
CO																
CO																
CO																
CO																
CO																
Total																
Attainment																

**OPERATIONS MANAGEMENT**

<b>Subject Code</b>	<b>MEM130</b>	<b>No. of Credits</b>	<b>4 - 1 - 0</b>
<b>No. of Lecture Hours / Week</b>	<b>04 + 02</b>	<b>Exam Hours</b>	<b>3</b>
<b>Total No. of Contact Hours</b>	<b>52 + 26</b>	<b>Exam Marks</b>	<b>100</b>

**Course Objectives:**

1. To analyze with an overall view of the decision-making process as it relates to the major areas of Production and Operations Management.
2. To discuss the evolution of principles of design facilities, processes, and control systems with a degree of predictability as to their performance.
3. To explain the principles of operations economies such as how to employ labor, buy materials and machines and invest capital, with regards to changing relative values of the basic components.
4. To evaluate computer projects, problems, cases, and discuss with competency in controlling the operations system that are designed to meet the products and services to meet quality standards, availability, and predict cost.
5. To solve operational problems such as scheduling, forecasting, inventory control, project management, MRP, etc. using software.

**Course outcomes:**

**At the end of the course the students shall have the abilities to:**

<b>CO1</b>	Analyze with an overall view of the decision-making process as it relates to the major areas of Production and Operations Management.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO2</b>	Discuss the evolution of principles of design facilities, processes, and control systems with a degree of predictability as to their performance.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO3</b>	Explain the principles of operations economies such as how to employ labor, buy materials and machines and invest capital, with regards to changing relative values of the basic components.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

<b>CO4</b>	Evaluate computer projects, problems, cases, and discuss with competency in controlling the operations system that are designed to meet the products and services to meet quality standards, availability, and predict cost.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO5</b>	Solve operational problems such as scheduling, forecasting, inventory control, project management, MRP, etc. using software.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

## **Course**

## **Content**

### **UNIT – 1**

**Introduction to Operations Management:** Historical development of OM Discussion on goods and service Transformation process Types of Decision making process in OM Discussion on production function (Conversion Process) Types of production systems with examples.

Introduction to demand forecasting Factors affecting demand forecasting and types of demand. Types and characteristics of forecasting methods. Moving average method of forecasting with example Weighted average method with examples. Time series method with examples. Regression method. Exponential smoothening method with examples.

**16 Hrs**

### **UNIT –2**

**Introduction to plant location:** Factors affecting plant location. Discussion of methods in plant location like factor rating method, load distance model and gravity model Problems related to plant location.

**Introduction to plant layout.:** Discussion of types of product flow Types of layout Product layout Process layout Fixed position layout Line balancing Method adopted in line balancing Discussion on relationship diagram Discussion on factor to be considered in designing plant layout.

**16 Hrs**

### **UNIT - 3**

**Product Development And Design:** Introduction, purpose of product design, product analysis, framework of process design, design for manufacture.

Introduction to materials management, purchasing, stores management, standardization,

simplification and value analysis.

**16 Hrs**

#### **UNIT – 4**

**Introduction to materials planning:** Discussion on procedures and benefits Product tree structure and MRP. Introduction to inventory management, material classification and codification. Problems on MRP.

Aggregate planning and its strategies Discussion on pure strategies Aggregate planning as distribution model. Problems related to Aggregate planning.

**15 Hrs**

#### **UNIT – 5**

Introduction to job scheduling Discussion on Different types of scheduling Forward loading and backward loading Assumption made in job sequencing Problems on n \_Jobs 2 Machine Problems on n \_Jobs 3 Machine Problems on n-jobs m machine.

Introduction to Supply chain management, steps involved in supply chain management, issues in supply chain management.

**15 Hrs**

#### **Text Books:**

1. Production and Operations Management prentice-Hall of India Privite Limited, 9<sup>th</sup> print 2004.
2. Theory and problems of Operations Mangerment, Tata-Mcgrawhill publishing company limited, 2<sup>nd</sup> edition 2004, Joseph G Monks.

#### **Reference Books:**

1. Production Systems, Planning, Analysis and Control JAMES.L. RIGGS,
2. Operations Management, ROGER.G. SCHROEDER, Mc Grawhill, 2002.

### Course Articulation Matrix

CO	CO	PO s and PSO s Mapping														
		PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	PSO	PSO
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
Total																

CO	CO	PO s and PSO s Attainment														
CO																
CO																
CO																
CO																
CO																
Total																
Attainment																



**HUMAN RESOURCES MANAGEMENT**

<b>Subject Code</b>	<b>MEM141</b>	<b>No. of Credits</b>	<b>4 - 1 - 0</b>
<b>No. of Lecture Hours / Week</b>	<b>04 + 02</b>	<b>Exam Hours</b>	<b>3</b>
<b>Total No. of Contact Hours</b>	<b>52 + 26</b>	<b>Exam Marks</b>	<b>100</b>

**Course Objectives:**

1. To discuss the importance of Human Resource Management (HRM) in organizations.
2. To discuss and analyze the need for scientific selection and training.
3. To design human systems for organizations.
4. To analyze the value human resource as an important source in any organization.
5. To create and manage a productive work force.

**Course outcomes:**

**At the end of the course the students shall have the abilities to:**

<b>CO1</b>	Appreciate and distinguish the professionalism in human resource management.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO2</b>	Analyze the needs and skill sets to be found in the human resource to perform well.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO3</b>	Demonstrate the capability to design a human resource system for any given organization.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO4</b>	Locate the various sources for recruitment.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

CO5	Define the productive workforce, and be able to manage it.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
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## Course Content

### UNIT - 1

**Introduction to Human Resources:** Importance of Human Resources -Human Resource Planning, Job Analysis and Methods.

**Recruitment- Recruiting Sources:** Recruiting Efforts with possible constraint -ability to attract incumbents. **16 Hrs**

### UNIT – 2

**The Selection Process:** Cost of Selection -discrete Selection Process -The Comprehensive Approach -Key Elements in successful Predictors -selection Devices -Employment Tests and Interviews -Job 'Previews and Background Investigation -Socializing the New Employee.

**16 Hrs**

### UNIT – 3

**Employee Training:** Determination of Training Needs and Priorities -Formal Employee Training Methods -Methods, for Training Managers Evaluating Training Effectiveness  
**Career Development:** Value of Effective Career Development -External versus Internal. Dimensions to a career -Career Stages.

**16 Hrs**

### UNIT – 4

**Motivating the Employees:** Different Theories and Approaches to work Motivation -Job Design. Work Scheduling and Motivation -Performance Appraisals –Rewarding the Productive-Employee.

**15 Hrs**

### UNIT – 5

**Compensating the Work Force:** Compensation Administration -Factors influencing the Compensation Administration -job Evaluation and Pay structure -Incentive Compensation Plans -Benefits and Services.

**Maintaining the Work Force:** Labor Relations -some Legislation governing Labor Relations -Safety and Health of Workers -Combating Stress and Burnout Problems -

Employee Discipline -disciplinary Actions -collective Bargaining Process.

15 Hrs

**Text Books:**

1. Human Resource Management – T.V.Subba Rao – Himalaya Publishing House.
2. Personnel and Human Resource Management –Memoria, HPH.

**Reference Books:**

1. Human Resources Management- Ashwathappa – Himalaya Publishers.
2. Principles of Personnel Management -Flippo –Mc graw hill.
3. Personnel Principles and Policies for Modern Manpower –Yoder, PHI.

**Course Articulation Matrix**

CO	CO	PO s and PSO s Mapping														
		PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	PSO	PSO
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
Total																

		PO s and PSO s Attainment														
CO1																
CO2																
CO3																
CO4																
CO5																
Total																
Attainment																

**KNOWLEDGE MANAGEMENT**

<b>Subject Code</b>	<b>MEM153</b>	<b>No. of Credits</b>	<b>4 - 1 - 0</b>
<b>No. of Lecture Hours / Week</b>	<b>04 + 02</b>	<b>Exam Hours</b>	<b>3</b>
<b>Total No. of Contact Hours</b>	<b>52 + 26</b>	<b>Exam Marks</b>	<b>100</b>

**Course Objectives:**

1. To discuss the history, state-of-the-art and future of Knowledge Management System applications.
2. To evaluate the importance of Knowledge Management in the management of engineering systems in organizations.
3. To apply Knowledge Management Systems to facilitate individual and group work for corporate business management.
4. To develop a thorough review of Knowledge Management applications both traditional and modern.
5. To discuss about the physical components needed for the development of Knowledge information system and adopt to organize files and databases in business management.

**Course outcomes:**

**At the end of the course the students shall have the abilities to:**

<b>CO1</b>	Learn about the importance of knowledge management with a specific emphasis on application in business organizations.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO2</b>	Classify and Comprehend difference of the conventional and modern methods of management of knowledge.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO3</b>	Understand and analyze capturing and coding of knowledge management using system tools and packages.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

<b>CO4</b>	Study and evaluate various knowledge transfer and sharing platforms using system platforms with a special focus on security and networking.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO5</b>	Conceive, design and develop knowledge management systems applicable to business house in tune with the management information system developed in the organization.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

### Course Content

#### UNIT- 1

**Knowledge Management:** - KM Myths – KM Life Cycle – Understanding Knowledge – Knowledge, intelligence –Experience – Common Sense – Cognition and KM – Types of Knowledge – Expert Knowledge – Human Thinking and Learning, Knowledge society-from data to information to knowledge- Drivers of knowledge management Intellectual capital- KM and learning organizations- case studies. Strategic alignment- creating awareness- articulation- Evaluation and strategic alignment Infrastructural development and deployment- Leadership, measurement and refinement- Role of CKO. **16 Hrs**

#### UNIT- 2

**Knowledge Management System Life Cycle:** - Challenges in Building KM Systems – Conventional Vrs KM System Life Cycle (KMSLS), Knowledge Creation and Knowledge Architecture – Nonaka’s Model of Knowledge Creation and Transformation. Knowledge Architecture Analyzing business environment-knowledge audit and analysis – designing KM team – creating KM system blue print- implementation- capture –store and sharing, Technology components –Internet, Intranet and Groupware solutions- tools for collaborative intelligence package choices, implementing security. **16 Hrs**

#### UNIT- 3

**Capturing Knowledge:** Evaluating the Expert – Developing a Relationship with Experts – Fuzzy Reasoning and the Quality of Knowledge – Knowledge Capturing Techniques, Brain Storming – Protocol - Analysis – Consensus Decision Making – Repertory Grid-Concept Mapping –Definition – Computer based user machine system – Integrated system – Need for a database – Utilization of models – Evolution – Subsystems – Organizational subsystems – Activities subsystems. **16 Hrs**

## UNIT- 4

**Knowledge Codification:** - Modes of Knowledge Conversion – Codification Tools and Procedures – Knowledge, Developer’s Skill Sets – System Testing and Deployment – Knowledge Testing–Approaches to Logical Testing, User Acceptance Testing – KM System Deployment Issues – User Training – Post implementation, Operating elements – Physical components – Processing functions – Outputs – MIS support for decision making – Structured programmable decisions – Unstructured non-programmable decisions – MIS structure based on management activity and Organizational functions – Synthesis of MIS structure.

## UNIT 5:

Knowledge Transfer And Sharing: -Transfer Methods – Role of the Internet – Knowledge Transfer in e-world, KM System Tools – Neural Network – Association Rules – Classification Trees – Data Mining and Business Intelligence – Decision Making Architecture – Data Management – Knowledge Management Protocols – Managing Knowledge Workers. Data representation – Communication network – Distributed systems – Logical data concepts – Physical storage devices – File organizations – Data base organization – Transaction processing. 15 Hrs

### Text Books:

1. Knowledge Management - Elias.M. Award & Hassan M. Ghaziri –Pearson Education-2003.
2. The essential guide to knowledge management,- Amrit Tiwana,' Pearson education-2001.
3. Knowledge Management – Sudhir Warier, Vikas Publishing House, ISBN:81-259-1363-7. 1st Edition, Sept 2008.

### Reference Books:

1. Hand book on knowledge Management – C W Holsapple, Springer, 2003 Porter M Competitive Advantage, Free Press, 1985.
2. Knowledge Engineering and Management - Guus Schreiber, Hans Akkermans, Anjo Anjewierden, Robert de Hoog, Nigel, Shadbolt, Walter Van de Velde and Bob Wielinga, Universities Press, 2001.

CO	CO	PO s and PSO s Mapping														
		PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	PSO	PSO
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
Total																

		PO s and PSO s Attainment														
C01																
C02																
C03																
C04																
C05																
Total																
Attainment																

**Department: Mechanical Engineering, SJCE, Mysuru**

**DATA ANALYTICS LAB**

<b>Subject Code</b>	<b>MEM16L</b>	<b>No. of Credits</b>	<b>0 - 0 – 1.5</b>
<b>No. of Lecture Hours / Week</b>	<b>3</b>	<b>Exam Hours</b>	<b>--</b>
<b>Total No. of Contact Hours</b>	<b>39</b>	<b>Exam Marks</b>	<b>--</b>

**Course Objectives:**

1. To explain the SPSS environment, data analysis using numerical, analytical and software.
2. To apply the above mentioned knowledge in handling the data, descriptive statistics, Summary statistics: Mean, median, mode, Variance, standard deviation, standard error of mean, and create OLAP, plots, tables, analyze results, make inferences.

**Course outcomes:**

**At the end of the course the students shall have the abilities to:**

<b>CO1</b>	Explain the SPSS environment, data analysis using numerical, analytical and software.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO2</b>	Apply the above mentioned knowledge in handling the data, descriptive statistics, and summary statistics: Mean, median, mode, Variance, standard deviation, standard error of mean, and create OLAP, plots, tables, analyze results, make inferences.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

**Course Content**

Introduction to SPSS environment, Stages of data analysis, Error checking and verification, Describing data: Numerical and graphical, Bar charts and pie charts, Control variables and degree categories, Histograms, Stem and leaf graphs, Checking the reliability and validity of the data, Screening and cleaning the data, Manipulating, transforming, editing and coding the data, Tables and graphs for one variable and two variables, Descriptive statistics for one



variable and two variables, Summary statistics: Mean, median, mode, Variance, standard deviation, standard error of mean, Creating OLAP, Box plots, Cross tabulation tables, Normal distribution. **39 Hrs**

**Reference Books:**

1. Harper W. Boyd, Ralph Westfall and Stanley F. Stasch (1986), “Marketing Research, Text & cases”, V Kumar, Arya publishers, Delhi, India.
2. Richard I Levin (1990), “Statistics for Management”, Prentice Hall of India Pvt. Ltd.
3. SPSS (Statistical Package for Social Sciences) manual (1990), SPSS Inc.

		<b>PO s and PSO s Mapping</b>															
<b>CO</b>	<b>CO</b>	<b>PO</b>	<b>PO</b>	<b>PO</b>	<b>PO</b>	<b>PO</b>	<b>PO</b>	<b>PO</b>	<b>PO</b>	<b>PO</b>	<b>PO</b>	<b>PO1</b>	<b>PO1</b>	<b>PO1</b>	<b>PSO</b>	<b>PSO</b>	<b>PSO</b>
<b>CO</b>		3	3	3	3	3	3			3					3	3	3
<b>CO</b>		3	3	3	3	3	3			3					3	3	3
<b>Total</b>																	

		<b>PO s and PSO s Attainment</b>															
<b>CO1</b>																	
<b>CO2</b>																	
<b>Total</b>																	
<b>Attainment</b>																	

**SUPPLY CHAIN MANAGEMENT**

<b>Subject Code</b>	<b>MEM210</b>	<b>No. of Credits</b>	<b>4 - 1 - 0</b>
<b>No. of Lecture Hours / Week</b>	<b>04 + 02</b>	<b>Exam Hours</b>	<b>3</b>
<b>Total No. of Contact Hours</b>	<b>52 + 26</b>	<b>Exam Marks</b>	<b>100</b>

**Course objectives:**

1. To describe and identify the importance of Supply Chain Management as a support function.
2. To design effectively the supply chain to meet a given objective.
3. To analyze effectively skill sets in assessing the inventory levels.
4. To analyze and identify the need to right transportation combination in order to meet the Supply Chain Management objectives.
5. To discuss the role if IT and integrate the same with the activities of Supply Chain Management.

**Course outcomes:**

**At the end of the course the students shall have the abilities to:**

<b>CO1</b>	Describe and identify the importance of Supply Chain Management as a support function.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO2</b>	Design effectively the supply chain to meet a given objective.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO3</b>	Analyze effectively skill sets in assessing the inventory levels.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

<b>CO4</b>	Analyze and identify the need to right transportation combination in order to meet the Supply Chain Management objectives.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO5</b>	Discuss the role if IT and integrate the same with the activities of Supply Chain Management.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

### Course Content

#### UNIT – 1

**Building a Strategic Frame Work to Analyze Supply Chains:** Supply Chain Definition, Supply Chain Stages, Decision Phases in A Supply Chain, Process views, some examples of Supply Chains, Competitive and Supply Chain Strategies, Achieving Strategic Fit, Drivers of Supply Chain Performance, Framework for Structuring Drivers-Inventory, Transportation, Facilities and Information. **16 Hrs**

#### UNIT – 2

**Designing the Supply Chain Network:** Role of Distribution in the Supply Chain, Design of Distribution Network, Factors Influencing Distribution Network Design, Frame work for Network Design Decisions.

**Facility Location and Network Design:** Facility Location, Capacity Allocation, Impact of Uncertainty on SCN, Discounted Cash Flow Analysis, Evaluating Network Design Decisions Using Decision Trees. (No Numerical Problems). **16 Hrs**

#### UNIT – 3

**Planning and Managing Inventories in a Supply Chain:** Cycle Inventory, Managing Multi-Echelon Cycle Inventory, Safety Inventory-Definition and Role, Supply Uncertainty-Impact on Safety Inventory, Replenishment Policies (Theoretical), Optimal Level of Product Availability, Managerial Levers to Improve Supply Chain Profitability.

**Sourcing:** Role of Sourcing, Supplier – Scoring and Assessment, Selection and Contracts, Design Collaboration. **16 Hrs**

## UNIT – 4

**Transportation and Pricing Products:** Role of Transportation in Supply Chain, Modes of Transportation and Their Characteristics, Designing Transport Network, Trade Off in Transport Design, Tailored Transportation, Role of Revenue Management in Supply Chain, Revenue Management for: Multiple Customer segments, Perishable Assets, Seasonal Demand, Bulk and Spot Contracts. (Numerical Problems).

**Coordination:** Coordination in Supply Chain, Bullwhip Effect, Obstacles to Coordination, Managerial Levers to Achieve Coordination, Building Strategic Partnerships. **15 Hrs**

## UNIT – 5

**Role of IT and Emerging Concepts:** Role of IT in Supply Chain, Supply Chain IT Frame Work, CRM, Internal SCM, SRM, E-Business: Role and Frame work, Emerging Concepts: Reverse Logistics, RFID Systems, Lean Supply Chains, Implementation of Six Sigma in Supply Chain. **15 Hrs**

### **Text Books:**

1. Supply Chain Management-2001, Strategy, Planning and Operation. Sunil Chopra and Peter Meindl; Pearson Education Asia, ISBN: 81-7808-272-1.

### **Reference Books:**

1. Supply Chain Redesign-Transforming Supply Chains into Integrated Value Systems, Robert B Handfield, Ernest L Nichols, Jr.2002, Pearson Education Inc, ISBN: 81-297-0113-8.
2. Modelling the Supply Chain-Jeremy F Shapiro, Duxbury 2002, Thomson Learning,

### Course Articulation Matrix

CO	CO	PO s and PSO s Mapping														
		PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	PSO	PSO	PSO
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
Total																

		PO s and PSO s Attainment														
C01																
C02																
C03																
C04																
C05																
Total																
Attainment																

**PROJECT MANAGEMENT**

<b>Subject Code</b>	<b>MEM220</b>	<b>No. of Credits</b>	<b>4 - 1 - 0</b>
<b>No. of Lecture Hours / Week</b>	<b>04 + 02</b>	<b>Exam Hours</b>	<b>3</b>
<b>Total No. of Contact Hours</b>	<b>52 + 26</b>	<b>Exam Marks</b>	<b>100</b>

**Course objectives:**

1. To explain role, Project Cycle, importance of Project Management, project appraisal, planning and determine the feasibility of the project prior to implementation.
2. To describe the phases of project cycle and various types of feasibilities that a project should be appraised for.
3. To describe Project Management, compare costs and benefits, explain concepts of Time Value of Money and Resources.
4. To describe the importance of Project Management of compounding and discounting in order to compare the present worth in alternative projects.
5. To describe and analyze various techniques in the Critical Path Method, PERT and explain the importance of human factors in project management.

**Course outcomes:**

**At the end of the course the students shall have the abilities to:**

<b>CO1</b>	Explain role of project management, Project Cycle and importance of Project Management of the project appraisal, planning and determine the feasibility of the project prior to implementation.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO2</b>	Describe the phases of the project cycle and various types of feasibilities that a project should be appraised for.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO3</b>	Describe Project Management of being able to compare costs and benefits, explain the concepts of Time Value of Money and Resources.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

<b>CO4</b>	Describe the importance of Project Management of compounding and discounting in order to compare present worth in alternative projects.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO5</b>	Describe various techniques in Critical Path Method and when each should be used. Prepare the lists of activities, Gantt or Bar Charts, Precedence Diagrams, Arrow Diagrams and PERT, critical function of time estimate and explain the importance of human factors in project management.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

### **Course**

### **Content**

#### **UNIT – 1**

**Introduction:** Capital investments, types of capital investments, Phases of capital budgeting, objectives of capital budgeting, common weakness in capital budgeting.

**Generation and screening of project ideas:** Tools to identify investment opportunities, scouting for project ideas project rating index. **16**

**Hrs**

#### **UNIT –2**

Market and demand analysis, technical analysis, cost of project means of finance, cost of production, working capital requirement and its analysis.

Time Value for Money, Investment criteria- NPV, IRR, Benefit Cost Ratio, Payback period Project cash flow. Balance sheet and Budgetary control. **16 Hrs**

#### **UNIT - 3**

**Risk analysis:** Sources measures and perspectives of Risk, discussion on different methods of Risk analysis, like sensitivity analysis, scenario analysis, break-even analysis and decision tree analysis.

**Social Cost Benefit Analysis:** rationale for SCABA, UNIDO approach, Little-Mirrless approach, shadow pricing, public sectors investment decision in India. **16 Hrs**

#### **UNIT – 4**

**Project organizations:** Types of project organizations structure for project management,

Human aspects in project Management.

**Networks Techniques in Project Management:** Development of project network, time estimation, determination of critical path. PERT Model and CPM model. Network cost system. **15 Hrs**

#### **UNIT – 5**

Project review and administrative aspects, control of in-process projects, post completion audit Atonement Analysis.

Discussion of case studies in project management. **15 Hrs**

#### **Text Books:**

1. Projects - appraisal, preparation, budgeting and implementation – Prasanna chandra -Tata MCgraw hill.

#### **Reference Books:**

1. Hand book of project management -Dennis lock
2. Project management-Dennis lock.



### Course Articulation Matrix

CO	CO	PO s and PSO s Mapping														
		PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	PSO	PSO
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
Total																

		PO s and PSO s Attainment														
CO1																
CO2																
CO3																
CO4																
CO5																
Total																
Attainment																

**ORGANIZATIONAL BEHAVIOR**

<b>Subject Code</b>	<b>MEM230</b>	<b>No. of Credits</b>	<b>4 - 1 - 0</b>
<b>No. of Lecture Hours / Week</b>	<b>04 + 02</b>	<b>Exam Hours</b>	<b>3</b>
<b>Total No. of Contact Hours</b>	<b>52 + 26</b>	<b>Exam Marks</b>	<b>100</b>

**Course objectives:**

1. To explain theories of Psychology, research at individual, group and organizational levels.
2. To describe organizational behavior and management practices by examining psychological principles.
3. To evaluate critically organizational practices, their impact on work behaviors, attitudes and performance.
4. To describe the group and individual dynamics in organizations.
5. To describe the methods of resolving conflicts through effective communication techniques.

**Course outcomes:**

**At the end of the course the students shall have the abilities to:**

<b>CO1</b>	Explain the evolution of Organizational behavior along with the key variables of it.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO2</b>	Describe the importance of ability, personality and learning as key variables in determining Individual behavior.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO3</b>	Outline, Analyze, Compare and contrast various theories of motivation, attitude and perception in shaping Individual behavior.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

<b>CO4</b>	Identify, describe & analyze the team dynamics in organizations with respect to group behavior.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO5</b>	Evaluate the organizational change, development and climate.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

## Course Content

### UNIT-1

**The Foundations of Organization Behavior**-Historical Background, Research Methodology, Theoretical Frameworks. OB in global context. Role of Technology.

**Individual Behavior-Ability:** Definition, Types of abilities-Physical Abilities and Intellectual Abilities, Ability job fit.

**Individual behavior-Perception:** Introduction- Perceptual process model, Factors influencing Perception, Attribution theory, Kelly's model of attribution, Stages of the perceptual process, Perceptual biases and errors, Perception and individual decision making.

**16 Hrs**

### UNIT-2

**Individual Behavior–Personality:** Definition, Determinants of personality, personality traits, Big Five model, 4 type thesis, personality disorders.

**Individual Behavior-Learning:** Definition, theories of Learning-Classical conditioning, operant conditioning and social learning. Reinforcement and schedules of reinforcement. Shaping behavior through learning.

**16 Hrs**

### UNIT-3

**Individual Behavior–Motivation:** Definition, Early theories of Motivation, contemporary theories, Implications of the theories for the managers.

**Individual Behavior Attitude, Values And Job Satisfaction: Definition,** formation of attitude, theories of attitude, effect of job satisfaction on employee performance, Types of values, Values, loyalty and ethical behavior.

**16 Hrs**

#### **UNIT-4**

**Foundations Of Group Behavior:** Communication and Group Decision Making -Leadership Styles and Skills, Group Behavior. **15 Hrs**

#### **UNIT-5**

**Organization Culture:** organizational Change -Organizational Development, Organizational Climate -Work stress.

**Realities Of Organizational Life:** Politics, Power and Conflict. **15 Hrs**

#### **Text Books:**

1. Organizational behavior- Stephen p. Robbins -Prentice Hall India.

#### **Reference Books:**

1. Organizational behavior- Fred Luthans -Mcgraw Hill.
2. Human behavior at work -Keith Davis -Prentice Hall India.
3. Organizational psychology -Robin, Kolb, etc.

### Course Articulation Matrix

CO	CO	PO s and PSO s Mapping														
		PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	PSO	PSO
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
Total																

		PO s and PSO s Attainment														
CO1																
CO2																
CO3																
CO4																
CO5																
Total																
Attainment																

**ADVERTISEMENT AND PUBLICITY**

<b>Subject Code</b>	<b>MEM242</b>	<b>No. of Credits</b>	<b>4 - 1 - 0</b>
<b>No. of Lecture Hours / Week</b>	<b>04 + 02</b>	<b>Exam Hours</b>	<b>3</b>
<b>Total No. of Contact Hours</b>	<b>52 + 26</b>	<b>Exam Marks</b>	<b>100</b>

**Course objectives:**

1. To discuss history, importance of advertising, publicity for information and business.
2. To classify and differentiate between advertising and publicity.
3. To describe how advertisement messages are planned, created and executed by paying importance to branding and product promotion.
4. To critically analyze how the advertising agency functions from the concept of execution of advertisements.
5. To evaluate the scope of advertising research in the promotion of messages, strategies of digital media in effective, professional communication, messages of advertising and publicity campaigns.

**Course outcomes:**

**At the end of the course the students shall have the abilities to:**

<b>CO1</b>	Explain the importance of advertising, publicity and learn to differentiate between their role in the promotion of products and services.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO2</b>	Classify and Comprehend role of ethics, legal and social implications of messages in advertising and publicity messages.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO3</b>	Analyze brand positioning, media decisions and strategies for an effective campaign.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

<b>CO4</b>	Analyze the role of advertising agencies from the concept to reality of messages in various campaigns.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO5</b>	Design and develop messages for the fictitious campaigns through artworks, case studies, collages, copy writing and visual content allocation in effective media messages for advertising effectiveness.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

### **Course**

### **Content**

#### **UNIT- 1**

Understanding Advertising " Concept, Nature, Definitions, Evolution and History " Role, Objectives, Functions, and Significance " Basic Theories and Applications " Types and Classification of Advertising, Factors Determining Advertising Opportunity of a Product/Service/Idea, Types of Appeals and Advertising Messages, Advertising and Society Ethical Issues in Advertising Social Criticism of Advertising Laws in Advertising, Advertising Statutory Bodies in India, Role of AAA and ASCI, Study of Various Codes of Conduct.

**15 Hrs**

#### **UNIT- 2**

Digital Advertising " Defining Digital Advertising: Evolution and Current Status " Digital Media Landscape " Emailers and Search Engine Optimization Mobile Marketing and Augmented Reality Emerging Trends " Digital Advertising Agencies – Structure and Functions " How mainstream advertising agencies are going Digital and Integration today " Digital Media Integration across Advertising, Market Research, Activation etc. Advent of Hybrid Advertising (Online merging with Offline) "Digital Laws –IT Act/TRAI" Various **Case Studies:** Successful and Disasters Brand Presence on Social Media. Copy in advertising, types of copy, requirements of a good copy, features and importance of layout, type of layout, design for various messages, art work and importance of visuals in advertising campaigns.

**16 Hrs**

#### **UNIT- 3**

Evolution of Ad Agencies- Various Stages and Current Status, Various Functional Departments and Scope of their Works (Account Planning, Account Servicing.

Creative- Copy & Art, Media, Production, Billing, HR etc.), Advertising Agency: Functions, Types, Structure, Departments, Remuneration, Pitching, Client Agency Relationship, Major advertising agencies in India and other continents, Revenue and Commission Systems.

**15 Hrs**

#### **UNIT- 4**

Advertising Budget and Account Management " Setting and Allocating Budget, Various Methods of Budgeting Budget and Audit Process : " Allocation of Budget and Methods " Agency Revenue Processes " Audits and its Processes, Introduction to Account Management-Scope, Definition, Responsibilities and Implementation Paths " Agency Operation: The organizations in Advertising, the Role of Advertising Agency, Types of Advertising Agencies " Client related Issues and the Process: Stages in the Client-Agency Relationship, Factors Affecting Client-Agency Relationship, The Pitching Mechanism-Simulation Creative and Media Briefing Process: " Agency -Media Interface " Agency Revenue Process ". **16 Hrs**

#### **UNIT- 5**

Strategic Planning and Brand Management " Introduction to Strategic Planning and Client Servicing : The Concept of a Brand, Characteristics of Brands (generic, expected, augmented, potential), the Importance of Brand Planning, Issues Influencing Brand Potential " Role and Relevance of Strategy in Advertising: Understanding the Branding Process and Advertising Perspective " Brand Positioning, Brand Benefits, Consumer Benefits " Brand Matrix and Media Matrix Brand Management: " The Evolution of Branding in Today's World " Understanding Brand Management " Various Theories and Models in Brand Management, 8 " Brand Prism Model, Perceptual Mapping, " Brand Purchasing under Dissonance Reduction, Brand Name Spectrum, " Product Research—Important Tools and Analysis " Brand Anatomy, Strategy and Structure, Brand Positioning, Personality " Image, Brand Extensions-Advantages & Pitfalls " Brand Architecture " How Integrated Marketing Communications (IMC) builds Brands – including Digital Ecosystem and the Integration of Digital Channels " Brand Audit – Inventory and Exploratory and Tracking, Co-branding/Licensing, Luxury Brands, B2B Brands " The Making of Indian & Global Brands " Leveraging Secondary Brand Associations to Build Brand Equity " Digital Brand Building: The FLIRT Model " What is a Global Brand? How can Indian Brands become Global? " Zaltman Metaphor Elicitation Technique (ZMET) " Various Case Studies. **16 Hrs**



**Text Books:**

1. Gupta - Essentials of Advertising.
2. The essential guide to knowledge management,- Amrit Tiwana,' Pearson education-2001.
3. Knowledge Management – Sudhir Warier, Vikas Publishing House, ISBN:81-259-1363-7. 1st Edition, Sept 2008.

**Reference Books:**

1. VILANILAM J. V. & VERGHESE A.K: Advertising Basics (Sage Publications, India, 2012).
2. MUELLER, BARBARA: Dynamics of international advertising: Theoretical and practical perspectives (New York: Peter Lang, 2006).
3. MANUKONDA R.: Advertising Promotions and News Media (DPS Publishing House India, 2013).
4. MELISSA DAVIS: The fundamentals of branding (AVA Pub., 2009).
5. MONLEY LEE, JOHNSON CARLA: Principles of Advertising: A Global Perspective (Viva Books, New Delhi, 2007).
6. Journals - Advertising Age , Brand Reporter, Brand Equity (Economic Times) Campaign, International Journal of Advertising, Marketing and Advertising.

### Course Articulation Matrix

CO	CO	PO s and PSO s Mapping														
		PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	PSO	PSO
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
Total																

		PO s and PSO s Attainment														
CO1																
CO2																
CO3																
CO4																
CO5																
Total																
Attainment																

**Department: Mechanical Engineering, SJCE, Mysuru**  
**MAINTENANCE ENGINEERING MANAGEMENT**

<b>Subject Code</b>	<b>MEM252</b>	<b>No. of Credits</b>	<b>4 - 1 - 0</b>
<b>No. of Lecture Hours / Week</b>	<b>04 + 02</b>	<b>Exam Hours</b>	<b>3</b>
<b>Total No. of Contact Hours</b>	<b>52 + 26</b>	<b>Exam Marks</b>	<b>100</b>

**Course objectives:**

1. To apply knowledge of maintenance engineering management fundamentals to the defined procedures, processes, systems and/or methodologies.
2. To apply and analyze broadly defined maintenance problems and solve them using mathematical and analytical tools.
3. To solve specific problems through standard codes and practices, provide solutions through validated inferences and authenticated documents.
4. To describe functions and responsibilities of a member and a leader, strength of team work in diverse challenges related to engineering and technology areas.
5. To report the findings of the maintenance solutions arrived at, using proper charts, tables and presentation techniques.

**Course outcomes:**

**At the end of the course the students shall have the abilities to:**

<b>CO1</b>	Apply knowledge of maintenance engineering management fundamentals to the defined procedures, processes, systems and/or methodologies.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO2</b>	Identify and analyze broadly defined maintenance problems and reach out to substantial solutions through mathematical and analytical tools using maintenance engineering management principles and practices.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO3</b>	Investigate specific problems through relevant standard codes and practices and provide solutions through validated inferences and authenticated documents.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

<b>CO4</b>	Acquaint with the functions and responsibilities of role of an individual as a member and also as a leader and understand the coherent strength of team work in diverse challenges related to engineering and technology areas.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO5</b>	Present the findings of the maintenance solutions arrived at, using proper charts, tables and presentation techniques.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

### **Course Content**

#### **UNIT- 1**

**Introduction:** Objectives and Functions of maintenance. Factors influencing plant availability, Maintenance control, Maintenance Strategies, Organization for Maintenance. Failure Statistics: Breakdown time distributions, Poisson, Exponential and Normal Distributions., Failure Probability, Survival Probability and age specific failure rates.

**15Hrs**

#### **UNIT- 2**

**Maintenance Planning:** Establishing maintenance plan and schedule, illustrative examples, Overhaul and Repair: Meaning and difference, optimal overhaul / Repair / Replace maintenance policy for equipment subject to breakdown. Replacement Decisions: Deterministic and stochastic replacement situations, failure and preventive replacement, Optimal Interval between preventive replacement of equipment subject to breakdown, group replacement. **16**

**Hrs**

### **UNIT- 3**

**Maintenance Systems:** Fixed time maintenance, Condition based Maintenance, Operate to failure, Opportunity Maintenance, Design out maintenance, Total Productive Maintenance. Preventive Maintenance: Designing a Technically sound preventive maintenance program, failure data, FCECA, Maintenance to prevent failures, lubrication program development.

**16 Hrs**

### **UNIT- 4**

**Inspection Decision:** Optimal Inspection frequency (for maximization of profit and minimization of downtime). NUCREC Method of prioritizing maintenance work.

**15 Hrs**

### **UNIT- 5**

**Shut down planning using CPM & PERT:** Spare Parts Management: Classification of spares, traditional approach to spares inventory, MUSIC-3D Approach to spares inventory, optimum number of spares to satisfy given service level, simulation technique. **15 Hrs**

#### **Reference Books:**

1. A KELLY AND M J HARRIS, Management of Industrial Maintenance , Butterworth's Co, Ltd.
2. AKS JARDINE, Maintenance, Replacement and Reliability, Pitman publishing Co.
3. A KELLY, Maintenance planning and control, Butterworth Co, Ltd.

### Course Articulation Matrix

CO	CO	PO s and PSO s Mapping														
		PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	PSO	PSO
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
CO		3	3	3	3	3	3			3				3	3	3
Total																

		PO s and PSO s Attainment														
CO1																
CO2																
CO3																
CO4																
CO5																
Total																
Attainment																

**DATA SYNTHESIS LAB**

<b>Subject Code</b>	<b>MEM26L</b>	<b>No. of Credits</b>	<b>0 - 0 – 1.5</b>
<b>No. of Lecture Hours / Week</b>	<b>3</b>	<b>Exam Hours</b>	<b>--</b>
<b>Total No. of Contact Hours</b>	<b>39</b>	<b>Exam Marks</b>	<b>--</b>

**Course objectives:**

1. To describe the various hypothesis testing, selection of statistical procedure, checking of the data, null hypothesis, parametric v/s Non parametric statistics, box plots, testing for normality, ‘T’ tests, ANOVA, correlation, regression, factor and cluster analyses.
2. To apply the above mentioned knowledge of testing and standards in these techniques and suggest the best technique, evaluate, analyze and infer for several case studies using relevant software.

**Course outcomes:**

**At the end of the course the students shall have the abilities to:**

<b>CO1</b>	Describe the various hypothesis testing, selection of statistical procedure, checking of the data, null hypothesis, parametric v/s Non parametric statistics, box plots, testing for normality, ‘T’ tests, ANOVA, correlation, regression, factor and cluster analyses.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3
<b>CO2</b>	Apply the above mentioned knowledge of testing and standards in these techniques and suggest the best technique, evaluate, analyze and infer for several case studies using relevant software.	PO1, PO2, PO3, PO4, PO5, PO6, PO9, PSO1, PSO2, PSO3

**Course Content**

**Hypothesis testing:** Steps in hypothesis testing, Types of hypotheses, Selecting an appropriate statistical procedure, Checking whether the data meets the required assumptions, Deciding whether to reject the Null hypothesis, Parametric v/s Non parametric statistics, Descriptive statistics and Box plots, Testing for normality, Independent sample and paired sample ‘t’ tests, Multivariate analysis: ANOVA, Correlation and regression, Factor analysis, Cluster analysis.

**39 Hrs**

**Reference Books:**

1. Harper W. Boyd, Ralph Westfall and Stanley F. Stasch (1986), “Marketing Research, Text & cases”, V Kumar, Arya publishers, Delhi, India.
2. Richard I Levin (1990), “Statistics for Management”, Prentice Hall of India Pvt. Ltd.
3. SPSS (Statistical Package for Social Sciences) manual (1990), SPSS Inc.

**Course Articulation Matrix**

CO <sub>s</sub>	CO	PO s and PSO s Mapping														
		PO	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	PSO	PSO
CO1		3	3	3	3	3	3			3				3	3	3
CO2		3	3	3	3	3	3			3				3	3	3
Total																

		PO s and PSO s Attainment														
CO1																
CO2																
Total																
Attainment																