INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

Department of Electrical and Electronics Engineering

COURSE DESCRIPTION FORMS

Course Title	**MANAGEMENT SCIENCES**			
Course Code	**A50014**			
Regulation	**R15**			
Course Structure	**Lectures**	**Tutorials**	**Practical**	**Credits**
	4	**1**	**-**	**4**
Course Coordinator	Mr. M Ramesh, Assistant Professor			
Team of Instructors	Mr .M Ramesh, Assistant Professor			

I. COURSE OVERVIEW:

Management Science is introduced to students with a specific purpose of providing them a better orientation of management, organizational structures, operations management, materials and marketing management, Human resource management, project management, strategic management and new management practices. This subject shows how to do thing in every sphere of activity including industry and academics

II. PREREQUISITE(S):

Level	Credits	Periods / Week	Prerequisites
UG	4	4	Basic concepts of Power System Generation

III. MARKS DISTRIBUTION:

Session Marks	University End Exam Marks	Total Marks
There shall be 2 midterm examinations. Each midterm examination consists of subjective test. The subjective test is for 20 marks, with duration of 2 hours. Subjective test of each semester shall contain 5 one mark compulsory questions in part-A and part-B contains 5 questions, the student has to answer 3 questions, each carrying 5 marks. First midterm examination shall be conducted for the first two and half units of syllabus and second midterm examination shall be conducted for the remaining portion. Five marks are earmarked for assignments. There shall be two assignments in every theory course. Marks shall be awarded considering the average of two assignments in each course.	75	100

IV. EVALUATION SCHEME:

S. No	Component	Duration	Marks
1	I Mid Examination	80 Minutes	20
2	I Assignment	--	05
3	II Mid Examination	80 Minutes	20
4	II Assignment	--	05
5	External Examination	3 Hours	75

V. COURSE OBJECTIVES:

At the end of the course, the students will be able to:

1. Understanding and making decisions realting to issues related organiational structure
2. Illustrate basic insights into organizational structures.
3. Enable the students with an understanding of operations management marketing management and work study concepts.
4. Understand the students about Human resource management and its functions.
5. Impart the knowledge of project management.

VI. COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to:

1. Exercise critical thinking to propose, communicate, and implement, action plan that address opportunities and issues.
2. Identify and utilize ethical and legal standards in contemporary management practices while taking into account all relevant stakeholders.
3. Observe and recognize behaviours in organizational settings to aid in predicting outcomes.
4. Appreciate the importance of time management, planning, and communication in completing a group project.
5. Gain personal and professional insight into organizational behaviour, diversity, personalities, goal setting, motivation, empowerment, and leadership style.
6. Demonstrate an understanding of the importance of values, ethics, and social responsibility for the self and for contemporary society .
7. Reflect on how values shape personal and community ethics and decision-making. An ability to function effectively on multi-disciplinary teams (team work).
8. An understanding of professional, ethical, legal, security and social issues and responsibilities

VII. HOW PROGRAM OUTCOMES ARE ASSESSED:

Program Outcomes		Level	Proficiency assessed by
PO1	**Engineering Knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	H	Lectures
PO2	**Problem Analysis**: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	H	Assignments
PO3	**Design/Development of Solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	S	Project Work
PO4	**Conduct Investigations of Complex Problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	S	Project Work
PO5	**Modern Tool Usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.	H	Project Work

PO6	**The Engineer And Society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.	S	Presentations
PO7	**Environment and Sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.	S	-
PO8	**Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.	S	-
PO9	**Individual and team work**: Function effectively as an individual, and as a member or leader indiverse teams, and in multidisciplinary settings.	S	Project Work
PO10	**Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	S	Seminars
PO11	**Project Management and Finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	H	Project Work
PO12	**Life - Long Learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	H	Lectures

N = None **S = Supportive** **H = Highly Related**

VIII. HOW PROGRAM SPECIFIC OUTCOMES ARE ASSESSED:

Program Specific Outcomes		Level	Proficiency Assessed By
PSO1	**Professional Skills:** Able to utilize the knowledge of high voltage engineering in collaboration with power systems in innovative, dynamic and challenging environment, for the research based team work.	H	Seminars
PSO2	**Problem-Solving Skills:** Can explore the scientific theories, ideas, methodologies and the new cutting edge technologies in renewable energy engineering, and use this erudition in their professional development and gain sufficient competence to solve the current and future energy problems universally.	S	Assignments
PSO3	**Successful Career and Entrepreneurship:** The understanding of technologies like PLC, PMC, process controllers, transducers and HMI one can analyze, design electrical and electronics principles to install, test , maintain power system and applications.	S	Project Work

N – None **S – Supportive** **H-Highly Related**

IX. SYLLABUS:

UNIT - I

Introduction to Management and Organization:

Concepts of management and organization-nature, importance and functions of management ,systems approach to management-theory-fayols principles of management-Maslow's theory of hierarchy of human needs-Douglas McGregor's theory x and theory y-Hertzberg two factor theory of motivation-leadership styles, social responsibilities of management ,designing organizational structures basic concepts related to organization - departmentation and decentralization, types and evaluation of mechanistic and organic structures of organization

UNIT - II

Operations and Marketing Management:

Principles and types of plant layout-methods of production(job ,batch and mass production),work study-basic procedure involved in method study and work measurement-business process reengineering(bpr)-statistical quality control: control charts for variables and attributes(simple problems)and acceptance sampling ,TQM, six sigma, demings contribution to quality, objectives of inventory control, EOQ, ABC analysis ,purchase procedure ,stores management and store records-JIT systems, supply chain management, functions of marketing mix,and marketing strategies based on product life cycle ,channels of distribution.

UNIT - III

Human Resources Management (HRM)

Concepts of HRD and HRD and personnel management and industrial relations (PMIR),HRM VS PMIR ,basic functions of hr manger: manpower planning recruitment, selection, training and development ,placement, wage and salary administration ,promotion ,transfer ,separation ,performance appraisal ,grievance handling and welfare administration ,job evaluation and merit rating-capability maturity model (CMM)levels.

UNIT - IV

Project Management (PERT/CPM)

Network analysis, programme evaluation and review technique (PERT),critical path method(CPM),identifying critical path , probability of completing the project within given time ,project cost analysis ,project crashing (simple

UNIT - V

Strategic management and contemporary strategic issues

Mission ,goals ,objectives, policy ,strategy, programmes, elements of corporate planning process, environmental scanning ,value chain analysis, SWOT analysis ,steps in strategy formulation and implementation, generic strategy alternatives .bench marking and balanced score card as contemporary business strategy

TEXT BOOKS:

1. stoner,freeman,gilbert,management.6th edition, pearson education, new delhi,2004
   P.vijay kumar. appa rao and ashnab,chnalill,cengage learning india,2012

REFERENCE BOOKS:

1. kotler Philip and keller Kevin lane marketing management,pearson,2012
2. koontz and weihrich :essentials of management ,mc graw hill,2012
3. Samuel c.certo :modern manmagement,2012

X. LIST OF TEXT BOOKS / REFERENCES / WEBSITES / JOURNALS / OTHERS

TEXT BOOKS:

1. C.L. Wadhwa "Electrical power systems" New Age International (P) Limited, Publishers, 1998.
2. M.L. Soni, P.V.Gupta, U.S. Bhathnagar, A. Chakrabarthy "A Text Book on Power System Engineering" Dhanpat Rai & Co Pvt. Ltd.

REFERENCES:

1. I.J. Nagaraj and D.P. Kothari "Modern Power System Analysis", Tata McGraw Hill, 2nd Edition. Hadi Saadat "Power System Analysis" TMH Edition.
2. John J Grainger William D Stevenson "Power system Analysis" TMC Companies, 4th edition.

XI. COURSE PLAN:

The course plan is meant as a guideline. There may probably be changes.

Lecture Number	CLO	Unit	Course Learning Objective	Topics to be covered	Reference Number
1-2	1	**I**	To understand the meaning of management and how the management has come into exits	Functions of management, evolution of management.	T1-Chapter 1
3	2	**II**	Acquires concepts on organization	Approaches to management	T1-Chapter 1
4-5	3		Able to identify organization structures in the business environment	Departmentation and decentralization, Types of mechanistic and Organization	T1-Chapter 1
6-8	4		Helps the students to know .to know the responsibility of management	Social responsibility of management	T1-Chapter 1
9-10	5		Techniques helps the student in selecting effective plant location	Basic concepts related to organization	T1-Chapter 1
11-12	6		Able to utilize the optimum space available.	Leadership styles and their roles and responsibilities	T1-Chapter 3
13-14	7	**III**	Awareness on different production systems and layouts	Types of plant layout and Production system	T1-Chapter 2
15-16	8		Able to learn work study, method study procedures	Work study, objectives, method study - definition, objectives and	T1-Chapter 2
17-19	9		Able to learn work study, work measurement	Work measurement- definition, time study, steps involved	T1-Chapter 2
20-22	10		Aware of SQC Charts and able to determine the causes for variation in process	Variable control charts, and R charts, attributes control charts and c charts.	T1-Chapter 2
22-25			Acquires knowledge on work sampling that helps in obtaining stand time and normal time	Different methods of performance rating, allowances, standard time calculation.	T1-Chapter 2
26-28	11		Able to understand the consumer and producer risk, acceptance of a commodity sampling plans, TQM	Acceptance sampling plan, single sampling and double sampling plans, OC curves	T1-Chapter 2
29-30	12		.Aware of Human resource functions in an organization.	Functions of HRM.	T1-Chapter 2
30-32	13	**IV**	Identify significance of job analysis, job evaluation and their uses in wage fixations	Job description, merit rating, difference with job evaluation, different methods of merit ratings	T1-Chapter2

32-34	14		To know the significance of performance of management	Performances management system and its process.	T1-Chapter9
35-36	15	V	Acquires knowledge on concepts of network analysis, construction of network diagrams, estimation of time values	Project management, network modeling-probabilistic model, various types of activity times estimation.	T1-Chapter10
37-38	16		Determines the Expected time values with the help of PERT and probability of accomplish within the specified period	. program me evaluation review techniques, critical path, probability of completing the project, deterministic model	T1-Chapter10
39-41	17		Ability to crash the project time to the maximum level with optimum duration and optimum cost	Critical path method (CPM), Critical path calculation, crashing of simple of networks	T1-Chapter10
42-43	18	V	Ability to understand the objectives of strategic management	Mission goals and its objectives	T1-Chapter10
44-45				strategies and programmes	T1-Chapter10
46-48	19		Analyze corporate planning	Environment scanning	T1-Chapter10
49-51				SWOT analysis	T1-Chapter10
52-53				Steps in strategy formulation	T1-Chapter10
54-55	20		To know the use of bench marking and balance scorecard	Types of bench marking	T1-Chapter10

XII. MAPPING COURSE OBJECTIVES LEADING TO THE ACHIEVEMENT OF THE PROGRAM OUTCOMES:

Course Objectives	Program Outcomes												Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
I	S	H		S							S	S	H	S	S
II	S	S	H	S	S				S		S	S	S	S	H
III	S	S	S	S	S				S		S	S	H	S	H
IV	S	S	S	H	S		S	S		S		S	H	H	S
V		S	S	S	S	S		S				S		S	S

S = Supportive H = Highly Related

XIII. MAPPING COURSE OUTCOMES LEADING TO THE ACHIEVEMENT OF THE PROGRAM OUTCOMES:

Course Outcomes	Program Outcomes												Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	S	S	H	S	S	S		S				S	S	S	
2	S	S	H	H	S		S					S	S	S	
3	S	H	H	S	S	S	S					S	S	S	S
4	S	S	S	H	S	S	S	S				S	S	S	
5	S	S	H	S	S							S	S	S	
6	S	S	H	S	S							S	S	S	
7	S	S	H	S	S		S					S	S	S	
8	S	S				S	H	H	H	S	H	S	S	S	H

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Prepared By: M Ramesh, Assistant Professor

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