



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad -500 043

## CIVIL ENGINEERING

### COURSE DESCRIPTOR

<b>Course Title</b>	<b>INDUSTRIAL MANAGEMENT AND PSYCHOLOGY</b>				
<b>Course Code</b>	AHS016				
<b>Program</b>	B.Tech				
<b>Semester</b>	VIII	CIVIL ENGINEERING			
<b>Course Type</b>	Skills				
<b>Regulation</b>	IARE - R16				
<b>Course Structure</b>	<b>Theory</b>			<b>Practical</b>	
	<b>Lectures</b>	<b>Tutorials</b>	<b>Credits</b>	<b>Laboratory</b>	<b>Credits</b>
	3	-	3	-	-
<b>Chief Coordinator</b>	Mr. G.N.V Sai Teja, Assistant Professor				
<b>Course Faculty</b>	Mr. G.N.V Sai Teja, Assistant Professor				

#### I. COURSE OVERVIEW:

The course focuses on more advanced Engineering Psychology is the scientific study of behavior and mental processes. Psychologists use systematic scientific methods in an effort to understand more about the how's and whys of behavior and human thought processes. Within the broad field of psychology are many specialty areas, each of which focuses on a different aspect of behavior. For instance, developmental psychology focuses on developmental behavior over the life span, cognitive psychology studies human thinking (cognition) and how the mind works, and social psychology studies human social behavior.

#### II. COURSE PRE-REQUISITES:

Level	Course Code	Semester	Prerequisites	Credits
UG	AHS015	V	Business Economics and Financial Analysis	3

### III. MARKS DISTRIBUTION:

Subject	SEE Examination	CIA Examination	Total Marks
Industrial management and psychology	70 Marks	30 Marks	100

### IV. DELIVERY / INSTRUCTIONAL METHODOLOGIES:

✗	Chalk & Talk	✓	Quiz	✓	Assignments	✗	MOOCs
✓	LCD / PPT	✓	Seminars	✗	Mini Project	✓	Videos
✗	Open Ended Experiments						

### V. EVALUATION METHODOLOGY:

The course will be evaluated for a total of 100 marks, with 30 marks for Continuous Internal Assessment (CIA) and 70 marks for Semester End Examination (SEE). Out of 30 marks allotted for CIA during the semester, marks are awarded by taking average of two CIA examinations or the marks scored in the make-up examination.

**Semester End Examination (SEE):** The SEE is conducted for 70 marks of 3 hours duration. The syllabus for the theory courses is divided into five units and each unit carries equal weightage in terms of marks distribution. The question paper pattern is as follows. Two full questions with “either” or “choice” will be drawn from each module. Each question carries 14 marks. There could be a maximum of two sub divisions in a question.

The emphasis on the questions is broadly based on the following criteria:

50 %	To test the objectiveness of the concept.
50 %	To test the analytical skill of the concept OR to test the application skill of the concept.

#### Continuous Internal Assessment (CIA):

CIA is conducted for a total of 30 marks (Table 1), with 25 marks for Continuous Internal Examination (CIE), 05 marks for Quiz/Alternative Assessment Tool (AAT).

Table 1: Assessment pattern for CIA

Component	Theory		Total Marks
	CIE Exam	Quiz/ AAT	
CIA Marks	25	05	30

**Continuous Internal Examination (CIE):**

Two CIE exams shall be conducted at the end of the 8th and 16th week of the semester respectively. The CIE exam is conducted for 25 marks of 2 hours duration consisting of two parts. Part–A shall have five compulsory questions of one mark each. In part–B, four out of five questions have to be answered where, each question carries 5 marks. Marks are awarded by taking average of marks scored in two CIE exams.

**Quiz / Alternative Assessment Tool (AAT):**

Two Quiz exams shall be online examination consisting of 25 multiple choice questions and are to be answered by choosing the correct answer from a given set of choices (commonly four). Marks shall be awarded considering the average of two quizzes for every course. The AAT may include seminars, assignments, term paper, open ended experiments, five minutes video and MOOCs

**VI. HOW PROGRAM OUTCOMES ARE ASSESSED:**

Program Outcomes (POs)		Strength	Proficiency assessed by
PO 1	<b>Engineering knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	2	Presentation on real-world problems
PO 9	<b>Individual and team work:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	1	Presentation on real-world problems
PO 10	<b>Communication:</b> Communication 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.	1	Seminar
PO 12	<b>Project management and finance:</b> 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.	1	Seminar

**3 = High; 2 = Medium; 1 = Low**

## VII. HOW PROGRAM SPECIFIC OUTCOMES ARE ASSESSED:

Program Specific Outcomes (PSOs)		Strength	Proficiency assessed by
PSO 1	<b>Engineering Knowledge:</b> Graduates shall demonstrate sound knowledge in analysis, design, laboratory investigations and construction aspects of civil engineering infrastructure, along with good foundation in mathematics, basic sciences and technical communication	1	Seminar
PSO 2	<b>Broadness and Diversity:</b> Graduates will have a broad understanding of economical, environmental, societal, health and safety factors involved in infrastructural development, and shall demonstrate ability to function within multidisciplinary teams with competence in modern tool usage.	-	-
PSO 3	<b>Self-Learning and Service:</b> Graduates will be motivated for continuous self-learning in engineering practice and/ or pursue research in advanced areas of civil engineering in order to offer engineering services to the society, ethically and responsibly.	-	-

**3 = High; 2 = Medium; 1 = Low**

## VIII. COURSE OBJECTIVES :

The course should enable the students to:	
I	Discuss the different Taylor's, Fayol's, Maslow's theories of management.
II	Understanding the line and staff, matrix, functional, virtual, cellular organizational structures of management.
III	Identify the functions of Human resources management and marketing strategies based on product life cycle.
IV	Outline the evolution and fields of social, educational, experimental clinical and personality psychology.

## IX. COURSE OUTCOMES (COs):

COs	Course Outcome	CLOs	Course Learning Outcome
CO 1	Nature and importance of management, Taylors scientific management theory, Fayol's principles of management, Maslow's theory of human needs, Douglas McGregor's theory X and theory Y, two factor theory, leadership styles, social responsibilities of management.	CLO 1	Describe the nature and importance of management, functions of management, theories of management-Taylors.
		CLO 2	Summarize the concept of scientific management theory, Fayol's principles of management, Maslow's theory of human needs.
		CLO 3	Analyze the concepts Douglas McGregor's theory X and theory Y, two factor theory, leadership styles
		CLO 4	Use the concept social responsibilities of management.

COs	Course Outcome	CLOs	Course Learning Outcome
CO 2	Designing Departmentation and decentralization, types of organization structures, line organization, line and, team structure, boundary less organization.	CLO 5	Designing organizational structures: Departmentation and decentralization, types of organization structures.
		CLO 6	Understand line organization, line and staff organization, functional organization, committee organization, matrix organization, virtual organization, cellular organization.
		CLO 7	Use cellular organization, team structure, boundary less organization, inverted pyramid structure.
		CLO 8	Illustrate inverted pyramid structure, lean and flat organization structure and their merits, demerits and suitability.
CO 3	Human Resources Management (HRM): evolution of HRM, basic functions of hr manager: manpower planning, recruitment, Marketing: functions of strategies based on product life.	CLO 9	Explain Human Resources Management (HRM): evolution of HRM, basic functions of hr manager: manpower planning, recruitment.
		CLO 10	Understand the concept of selection, training and development, placement, wage and salary administration, promotion, transfer, separation.
		CLO 11	Understand the concept of appraisal, grievance handling and welfare administration, job evaluation and merit rating.
CO 4	Definition, goals, fields and applications, development of psychology from middle 19th century, psychology in ancient India, the founding of, development of psychology in India.	CLO 12	Discuss the concept of Definition, goals, fields and applications, development of psychology from middle 19th century, psychology in ancient India.
		CLO 13	Understand the founding of experimental psychology: Contributions of Weber, Fechner.
		CLO 14	Summarize the concept of Contributions of Weber, Fechner, Wundt and Eddinghaus, William James and Galton, development of psychology in India.
CO 5	Applications of psychology to disadvantaged groups, problems of social integration, information technology and mass media, economic development. fields of psychology: social psychology, educational.	CLO 15	Use Applications of psychology to disadvantaged groups, problems of social integration.
		CLO 16	Understand the information technology and mass media, economic development.
		CLO 17	Understand the characteristics fields of psychology: social psychology, educational psychology, experimental psychology, clinical psychology, personality psychology.

#### X. COURSE LEARNING OUTCOMES (CLOs):

CLO Code	CLO's	At the end of the course, the student will have the ability to:	PO's Mapped	Strength of Mapping
AHS016.01	CLO 1	Describe the Nature and importance of management, functions of management, and theories of management-taylors.	PO 1	2
AHS016.02	CLO 2	Summarize the concept of scientific management theory, fayols principles of management maslow's theory of human needs	PO 1	2
AHS016.03	CLO 3	Analyze the concepts douglas mcgregor's theory x and theory y, two factor theory, leadership styles	PO 1	3
AHS016.04	CLO 4	Use the concept social responsibilities of management..	PO 1	2

CLO Code	CLO's	At the end of the course, the student will have the ability to:	PO's Mapped	Strength of Mapping
AHS016.05	CLO 5	Designing organizational structures: Departmentation and decentralization, types of organization structures,	PO1, 9	2
AHS016.06	CLO 6	Understand line organization, line and staff organization, functional organization, committee organization, matrix organization, virtual organization, cellular organization,	PO 9	2
AHS016.07	CLO 7	Use cellular organization, team structure, boundary less organization, inverted pyramid structure,	PO 9	2
AHS016.08	CLO 8	Illustrate inverted pyramid structure, lean and flat organization structure and their merits, demerits and suitability.	PO9, 10	2
AHS016.09	CLO 9	Explain Human Resources Management (HRM): evolution of HRM, basic functions of hr manager: manpower planning, recruitment.	PO 10	1
AHS016.10	CLO 10	Understand the concept of selection, training and development, placement, wage and salary administration, promotion, transfer, separation,.	PO 10	1
AHS016.11	CLO 11	Understand the concept of appraisal, grievance handling and welfare administration, job evaluation and merit rating.	PO 10	2
AHS016.12	CLO 12	Discuss the concept of Definition, goals, fields and applications, development of psychology from middle 19th century, psychology in ancient India	PO 10,12	2
AHS016.13	CLO 13	Understand the founding of experimental psychology: Contributions of Weber, Fechner..	PO 10,12	3
AHS016.14	CLO 14	Summarize the concept of Contributions of Weber, Fechner, Wundt and Eddinghaus, William James and Galton, development of psychology in India.	PO 12	3
AHS016.15	CLO 15	Use Applications of psychology to disadvantaged groups, problems of social integration	PO 12	3
AHS016.16	CLO 16	Understand the information technology and mass media, economic development..	PO 12	3
AHS016.17	CLO 17	Understand the characteristics fields of psychology: social psychology, educational psychology, experimental psychology, clinical psychology, personality psychology.	PO 12	2

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#### XI. MAPPING COURSE OUTCOMES LEADING TO THE ACHIEVEMENT OF PROGRAM OUTCOMES

Course Outcomes (COs)	Program Outcomes (POs)				
	PO 1	PO 9	PO 10	PO 12	PSO1
CO 1	2	1	1	2	1
CO 2	-	1	1	2	-
CO 3	-	1	1	1	1
CO 4	2	3	2	1	1
CO 5	2	1	2	1	1

**XII. MAPPING COURSE LEARNING OUTCOMES LEADING TO THE ACHIEVEMENT OF PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES:**

Course Learning Outcomes (CLOs)	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CLO 1	3								2	1		1	1		
CLO 2										2		2			
CLO 3	2								1			3	1		
CLO 4	3								2	2			1		
CLO 5									1			1			
CLO 6										1					
CLO 7										2		3			
CLO 8									1						
CLO 9												1			
CLO 10										1					
CLO 11									1			2	1		
CLO 12									3			1	1		
CLO 13	3														
CLO 14	2									2					
CLO 15	2								1			1			
CLO 16	2								1	2		2	1		
CLO 17	3								1	2		2	1		

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**XIII. ASSESSMENT METHODOLOGIES – DIRECT**

CIE Exams	PO1, PO9, PO10, PO12 PSO1	SEE Exams	PO1, PO9, PO10, PO12 PSO1	Assignments	PO1, PO9, PO10	Seminars	PO1, PO9, PO10, PO12 PSO1
Laboratory Practices	-	Student Viva		Mini Project		Certification	-
Term Paper	-						

**XIV. ASSESSMENT METHODOLOGIES - INDIRECT**

✓	Early Semester Feedback	✓	End Semester OBE Feedback
✗	Assessment of Mini Projects by Experts		

## XV. SYLLABUS

<b>Unit-I</b>	<b>INTRODUCTION TO MANAGEMENT</b>
Nature and importance of management, functions of management, theories of management-taylor's scientific management theory, fayol's principles of management, maslow's theory of human needs, douglas mcgregor's theory x and theory y, two factor theory, leadership styles, social responsibilities of management.	
<b>Unit-II</b>	<b>ORGANIZATIONAL STRUCTURES</b>
Designing organizational structures: Departmentation and decentralization, types of organization structures, line organization, line and staff organization, functional organization, committee organization, matrix organization, virtual organization, cellular organization, team structure, boundary less organization, inverted pyramid structure, lean and flat organization structure and their merits, demerits and suitability.	
<b>Unit-III</b>	<b>HUMAN RESOURCE MANAGEMENT AND MARKETING MANAGEMENT</b>
Human Resources Management (HRM): evolution of HRM, basic functions of hr manager: 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 Marketing: functions of marketing, marketing mix, marketing strategies based on product life cycle., channels of distribution	
<b>Unit-IV</b>	<b>FUNDAMENTALS OF PSYCHOLOGY</b>
Definition, goals, fields and applications, development of psychology from middle 19th century, psychology in ancient India, the founding of experimental psychology: Contributions of Weber, Fechner, Wundt and Eddinghaus, William James and Galton, development of psychology in India.	
<b>Unit-V</b>	<b>APPLICATIONS AND FIELDS OF PSYCHOLOGY</b>
Applications of psychology to disadvantaged groups, problems of social integration, information technology and mass media, economic development. fields of psychology: social psychology, educational psychology, experimental psychology, clinical psychology, personality psychology.	
<b>Text Books:</b>	
<ol style="list-style-type: none"> <li>1. A.R. Aryasri, Management Sciencel, Tata MC Graw Hill, 2009.</li> <li>2. Atkinson et al.), Hilgard's Introduction to Psychologyl, Harcourt Brace, 13<sup>th</sup> Edition, 1985.</li> <li>3. B1ell,P.A.,Greene,T.C.,Fisher,J.D.,andBaumA. "EnvironmentalPsychologyl" Belmont,CA:The son Wadsworth. Ricker Library, 5th Edition, 2001.</li> </ol>	
<b>Reference Books:</b>	
<ol style="list-style-type: none"> <li>1. Sahakian, William, S. Ed., —History of Psychologyl, F.E. Peacock Publishers, Inc. Itasca, U.S.A., 1981.</li> <li>2. Charles G. Morris, Albert Anthony Maisto, Ann Levine, —Psychology: An Introductionl, Prentice Hall 2002.</li> </ol>	

## XVI. COURSE PLAN:

The course plan is meant as a guideline. Probably there may be changes.

Lecture No	Topics to be covered	Course Learning Outcomes (CLOs)	Reference
1	Define Nature and Importance of management, functions of management	CLO 1	T1:13.3
2-3	Describe the concept of theories of management-taylor's scientific management theory.	CLO 1	R1:11.48
4-5	Describe the Concept of fayol's principles of management, maslow's theory of human needs.	CLO 2	T1:26.6 R1:18.50



Lecture No	Topics to be covered	Course Learning Outcomes (CLOs)	Reference
6-7	Describe the concept of douglas mcgregor's theory x and theory y, two factor theory, leadership styles, social responsibilities of management.	CLO 3	T1:26.7 R1:11.51
8-9	Define the Designing of organizational structures: Departmentation and decentralization, types of organization structures.	CLO 5	T1:16.8
10-11	Identify line and staff organization, functional organization, committee organization, matrix organization.	CLO 6	T1:8.10
12-13	Lean and flat organization structure and their merits, demerits and suitability.	CLO 8	T1:16.14 R1:17.55
14-15	Human Resources Management (HRM): evolution of HRM, basic functions of hr manager: manpower planning, recruitment, selection.	CLO 9	T1:06.15 R1:20.54
16-18	Basic functions of hr manager: manpower planning, recruitment, selection.	CLO 9	T1:14.13 R1:13.1
19-20	Training and development, placement, wage and salary administration, promotion, transfer separation.	CLO 10	T1:15.02 R1:12.14
21-22	Performance appraisal, grievance handling and welfare administration, job evaluation and merit rating.	CLO 11	T1:20.16 R1:19.09
23	Define the concept Marketing: functions of marketing, marketing mix, marketing.	CLO 12	T1:15.14 R1:11.32
24-25	Strategies based on product life cycle., channels of distribution.	CLO 13	T1:15.17 R1:61.13
26-27	Recognize the psychology in ancient India, the founding of experimental psychology: Contributions of Weber, Fechner, Wundt and Eddinghaus.	CLO 13	T1:15.17 R1:11.23
28	William James and Galton, development of psychology in India.	CLO 14	T2:17.2 R2:19.64
29	Applications of psychology to disadvantaged groups, problems of social integration.	CLO 15	T2:17.2
30	Information technology and mass media, economic development. fields of psychology.	CLO 15	T2:17.2 R2:19.17
31-33	Technology and mass media, economic development. fields of psychology.	CLO 16	T2:17.2
34	Understand the foundation for classical inference involving hypothesis testing and two types of errors possible.	CLO 16	T2:37.3 R2:41.71
35	Understand the foundation for classical inference involving.	CLO 16	T2:17.4 R2:11.68
36	Hypothesis testing and two types of errors possible.	CLO 16	T2:17.7 R2:41.14
37	Information technology and mass media.	CLO 16	T2:37.12 R2:51.15
38	Economic development.	CLO 16	T2:37.8 R2:41.22
39	Fields of psychology: social psychology.	CLO 17	T2:07.8 R2:71.23
40-41	Educational psychology.	CLO 17	T2:07.24 R2:31.18
42	Experimental psychology.	CLO 17	T2:67.09 R2:91.84
43	Clinical psychology.	CLO 17	T2:57.12 R2:41.22
44-45	Personality psychology.	CLO 17	T2:57.14 R2:61.85

**XVII. GAPS IN THE SYLLABUS-TO MEET INDUSTRY / PROFESSION REQUIREMENTS:**

<b>S No</b>	<b>Description</b>	<b>Proposed actions</b>	<b>Relevance with POs</b>	<b>Relevance with PSOs</b>
1	To improve standards and analyze the concepts.	Seminars	PO 1	PSO 1
2	Conditional Nature and importance of management, functions of management, theories of management-taylors scientific management theory.	Seminars	PO 9	PSO 1
3	Encourage students Recognize the psychology in ancient India, the founding of experimental psychology: Contributions of Weber, Fechner, Wundt and Eddinghaus.	NPTEL Videos	PO 12	-

**Prepared by:**

Mr. G.N.V Sai Teja, Assistant Professor

**HOD, CE**