NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

DEPARTMENT OF CHEMICAL ENGINEERING

COURSE PLAN – PART I			
Name of the programme and specialization	B. Tech, Chemical Engineering		
Course Title	Engineering Graphics		
Course Code	MEIR 15	No. of Credits	3
Course Code of Pre-requisite subject(s)	NIL		
Session	July 2022	Section (if, applicable)	-
Name of Faculty	Dr. T. Jagadesh	Department	Production Engineering
Official Email	jagadesh@nitt.edu	Telephone No.	+91 - 9080746066
Name of Course Coordinator(s) (if, applicable)			
Official E-mail		Telephone No.	
Course Type (please tick appropriately)	✓ Core course	☐ Elective course	

Syllabus (approved in BoS)

Fundamentals Drawing standard - BIS, dimensioning, lettering, type of lines, scaling conventions. Orthographic projection Introduction to orthographic projection, drawing orthographic views of objects from their isometric views - Orthographic projections of points lying in four quadrants. Orthographic projection of lines parallel and inclined to one or both planes Orthographic projection of planes inclined to one or both planes. Projections of simple solids - axis perpendicular to HP, axis perpendicular to VP and axis inclined to one and both planes. Sectioning of solids Section planes perpendicular to one plane and parallel or inclined to other plane. Intersection of surfaces Intersection of cylinder & cylinder, intersection of cylinder & cone, and intersection of prisms. Development of surfaces Development of prisms, pyramids and cylindrical & conical surfaces. Isometric and perspective projection Isometric projection and isometric views of different planes and simple solids, introduction to perspective projection.

References

1. Bhatt, N. D. and Panchal, V.M, Engineering Drawing, Charotar Publishing House, 2010.
2. Ken Morling, Geometric and Engineering Drawing, 3rd Edition, Elsevier, 2010
3. Jolhe, D. A., Engineering drawing, Tata McGraw Hill, 2008
4. Shah, M. B. and Rana, B. C., Engineering Drawing, Pearson Education, 2009
5. K.V. Natarajan, A text book of Engineering Graphics, Dhanalakshmi Publishers, Chennai, 2006.

COURSE OBJECTIVES

1. Irrespective of engineering discipline, it has become mandatory to know the basics of Engineering Graphics. The student is expected to possess the efficient drafting skill depending on the operational function in order to perform day to day activity.
2. Provide neat structure of industrial drawing.
3. Enables the knowledge about position of the component and its forms Interpretation of technical graphics assemblies.
4. Preparation of machine components and related parts.

MAPPING OF COs with POs

Course Outcomes	Programme Outcomes (PO) (Enter Numbers only)
1. Understand and visualize the engineering components	1,2
2. Understand the construction of chemical engineering compoenets	1,2,3
3. Ability of design and problem solving in chemical industries	1,2,3,4
4. Pre requisite knowledge of equipment used in chemical industires	1,2,3,4

COURSE PLAN – PART II

COURSE OVERVIEW

- Fundamental of drawings and standards
- Geometrical constructions, basic shapes and conic sections
- Orthographic views and projection of points, lines and solids
- Section and development of solids
- Isometric and perspective projection

COURSE TEACHING AND LEARNING ACTIVITIES			(Add more rows)
S.No.	Week/Contact Hours	Topic	Mode of Delivery
1.	1	Fundamentals Drawing standard - BIS, dimensioning, lettering, type of lines, scaling conventions.	PPT
2.	2	Orthographic projection Introduction to orthographic projection, drawing orthographic views of objects from their isometric views	PPT
3.	3	Orthographic projections of points lying in four quadrants.	PPT
4	4	Orthographic projection of lines parallel and inclined to one or both planes.	PPT
5	5	Orthographic projection of planes inclined to one or both planes.	PPT
6	6	Projections of simple solids - axis perpendicular to HP, axis perpendicular to VP and axis inclined to one and both planes.	PPT
7	7	Sectioning of solids Section planes perpendicular to one plane and parallel or inclined to other plane.	PPT
8	8	Intersection of surfaces Intersection of cylinder & cylinder, intersection of cylinder & cone, and intersection of prisms.	PPT
9	9	Development of surfaces Development of prisms, pyramids	PPT
10	10	Development of cylindrical & conical surfaces	PPT
11	11	Isometric and perspective projection Isometric projection and isometric views of different planes and simple solids,	PPT
12	12	Introduction to perspective projection.	PPT

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Assignment	Every 2 weeks	2 weeks	20
2	Mid exam	Week 6	1 hour	30
3	Compensation Assessment *	Week 9	1 hour	30
4	Final Assessment *	Week 13	2 hours	50

***mandatory; refer to guidelines on page 4**

COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)

- Feedback from the students during class committee meetings
- Anonymous feedback through questionnaire (Mid of the semester & End of the semester)
- End semester feedback on course outcomes

COURSE POLICY (including compensation assessment to be specified)

- Attending all the assessment mandatory for every student
- One compensation assessment will be conducted for those students who are physically absent for the assessment 1 and/or 2, only for the valid reason
- Absolute/ relative grading will be adopted for the course

ATTENDANCE POLICY (A uniform attendance policy as specified below shall be followed)

- At least 75% attendance in each course is mandatory.
- A maximum of 10% shall be allowed under On Duty (OD) category.
- Students with less than 65% of attendance shall be prevented from writing the final assessment and shall be awarded 'V' grade.

ACADEMIC DISHONESTY & PLAGIARISM

- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.

➢ The above policy against academic dishonesty shall be applicable for all the programmes.
ADDITIONAL INFORMATION, IF ANY
FOR APPROVAL
Course Faculty _____ (Dr. T. Jagadeesh) **CC- Chairperson** _____ (Dr. K. N. Shweta) **HOD** _____

Production

Guidelines

a) The number of assessments for any theory course shall range from 4 to 6.

b) Every theory course shall have a final assessment on the entire syllabus with at least 30% weightage.

c) One compensation assessment for absentees in assessments (other than final assessment) is mandatory. Only genuine cases of absence shall be considered.

d) The passing minimum shall be as per the regulations.

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2018	2017	2016	2015	
35% or (Class average/2) whichever is greater.		(Peak/3) or (Class Average/2) whichever is lower		40%

e) Attendance policy and the policy on academic dishonesty & plagiarism by students are uniform for all the courses.

f) Absolute grading policy shall be incorporated if the number of students per course is less than 10.

g) Necessary care shall be taken to ensure that the course plan is reasonable and is objective.