

Subject Code: 1ET4060405	Subject Title: Manufacturing Engineering
Pre-Requisite	--

RATIONALE:

This subject of Manufacturing Engineering provides knowledge regarding different types of manufacturing processes specially drilling, welding, turning, tapping used to produce variety of metal products. Manufacturing Engineering is the backbone of the real industrial environment which helps to develop and enhance relevant technical hand skills required by the technician working in the petroleum engineering industries. It also provides information about behavior of metal and change in it during different manufacturing process. As a technician the knowledge and practical skills in different manufacturing processes are essential and hence emphasis is also given in this course towards skills development. Further the technician should be able to handle machine, equipment, tools and accessories in the recommended manner and also follow safety precautions

Course Objective:

1. To understand the roll of different manufacturing operations like drilling, tapping, turning, facing, welding for petroleum engineering different job of piping and joining using process parameters and safe working procedures.

TEACHING AND EVALUATION SCHEME:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)			
Lecture	Tutorial	Practical	Credit	Theory		Practical	
				University Assessment	Continuous Assessment	University Assessment	Continuous assessment
-	-	2	1	--	--	20	30

DETAILS OF COURSE CONTENTS:

UNIT	TOPIC	Total Hrs.	Weightage %
1.	Explain the importance of manufacturing processes require for petroleum engineering	02	08
2.	Describe various mechanical properties of substance.	02	08
3.	Role of turning, joining, tapping, drilling processes in manufacturing of petroleum engineering components.	04	16
4.	Prepare jobs using drilling machine.	06	20
5.	Prepare jobs using arc welding, gas cutting, spot welding	06	20

6.	Prepare a piping job on lathe with different machining operations on it, like turning, facing, grooving operations.	06	20
7.	Explain thread production processes and prepare a job using tapping operations.	02	08

Course Outcome:

The students will be able to

1. Understand the basic concept of Manufacturing Engineering.
2. Know about the basic manufacturing engineering and their applications.
3. Understand Joining, drilling, tapping and turning process and their parameters.

List of References:

1. Production Technology, R.K. Jain and S.C. Gupta, Khanna publication
2. Workshop Technology I & II, Raghuwanshi, Dhanpat Rai and Sons
3. Foundry Engineering , P. L. Jain, Tata MacGraw Hill Education
4. Principle of Foundry, Jain & Gupta, National Book Trust, India

List of Software/Learning Websites:

1. http://thelibraryofmanufacturing.com/forming_basics.html
2. http://www3.nd.edu/~manufact/MPEM%20pdf_files/Ch07.pdf
3. www.ielm.ust.hk/dfaculty/ajay/courses/ieem215/lecs/3_forming.pdf
4. www.youtube.com/watch?v=HkjdMdp9KVU
5. <http://www-old.me.gatech.edu/jonathan.colton/me4210/casting.pdf>
6. [http://www.youtube.com/watch?v=6xnKmt_gsLs\(HotRolling\)](http://www.youtube.com/watch?v=6xnKmt_gsLs(HotRolling))