COURSE PLAN

Course Title: MACHINING TECHNOLOGY
Course Code: PRPC 12
No. of Credits: 3
Department: Production Engineering.
Programme : B.Tech. Production Engineering

Pre-requisites: Basic Engineering
MEIR12 Engineering Graphics
PRIR15 Introduction to Production Engineering
Co-requisites: PRLR 10 Manufacturing Processes Lab-I

Course Co-ordinator: Dr.M.Duraiselvam
Course Teacher/Tutor: Dr.T.Selvaraj
Learning Hours: Lecture 3hrs/week
Course Type. PC
Session in Academic Year: SEMESTER III

Course Description:
Every production engineer should know the available process for making a product. A detailed understanding of various machining processes and machine tools is very essential. This course discusses the various machining process that can be used in a material to make it as a product.

Course Objectives:

- To know different machining operations like turning, drilling, milling and finishing.
- To know different machine tools and cutting tools used in these processes
- To select suitable machining conditions

Course Content:

Theory of metal cutting: Introduction – Machine tools – Cutting tools – Tool geometry - Orthogonal and oblique cutting – Mechanics of cutting – Types of chips – Cutting speeds and feeds – Tool failure, Tool life – Tool materials – Cutting fluids.

Turning operations: Introduction – Lathe – Types of lathes – Size of a lathe – Work holding devices – Lathe operations – Metal removal rate and machining time calculations.

Drilling and allied operations: Introduction – Drilling machines – Types – Drills – Drilling machine operations – Boring, Reaming and other operations – Boring machine – Types.

Introduction – Milling machine – Types – Milling cutters – Milling process – Milling machine operations.

Finishing processes: Introduction – Abrasive machining – Abrasives – Grinding wheel – Grinding machines – Types – Fine finishing operations.

Course Learning Outcomes (CLOs)
Students will be able to

- Summarize the theory of metal cutting and compute machining time.
- Recognize various parts of machine tools, list the accessories required for different operations performed.
- Decide the sequence of machining operations to be performed and machining conditions to be followed.

Course Teaching and Learning Activities: lectures with ppt.
Course Assessment Methods:
Cycle test-1 : 20 marks
Cycle test-2 : 20 marks
Assignment : 10 marks
End semester exam : 50 marks

Guidelines on grading: as specified in the B.Tech. Regulations of NITT.

Essential Learning material:

1. NagendraParashar, and Mittal, R.K, Elements of manufacturing processes,Prentice Hall of India Private Limited,1st Edition, 2003.
2. HajraChoudhury SK, Bose HK and HajraChoudhury AK, Elements of Workshop Technology, Vol. II, Media promoters and Publishers Pvt. Ltd. 12th Edition, 2007.

Means/Processes for Student Feedback on Course
Students give their feedback after the cycle test through their representatives.
Students are asked to complete evaluation of their learning experiences at the conclusion of each course in which they enroll.

Course Policy and attendance requirement: as specified in the B.Tech. Regulations of NITT.
The minimum attendance requirement is 75%.

Course faculty | CC Chairperson | HoD