

SHRI VENKATESHWARA UNIVERSITY



Syllabus

M.TECH - PART TIME Production Engineering IInd SEMESTER

(Three Years Post Graduation Programme)

(w.e.f. 2019-20)

**SCHOOL OF ENGINEERING &
TECHNOLOGY**

Course:- M.Tech
Subject:- Theory Of Machining And Grinding
Max. Marks: a) Internal/Practical- 30
b) External- 70

Year/Semester:- I/II
Subject Code:- WPR-201

Credit Hours		
L	T	P
3	0	0

Syllabus Contents:

UNIT-I

Machining, definition and objectives. Geometry of cutting tools; turning, milling and drilling – in different reference systems like machine reference system, tool reference system and work reference system. Sharpening and re-sharpening of cutting tools.

UNIT-II

Mechanism of chip formation by single point tools, drills and milling cutters. Types of chips and their characteristics. Effective rake. Mechanics of machining, theoretical estimation and experimental determination of cutting forces and power consumption. Dynamometers; types, design, construction and use.

UNIT-III

Thermodynamics of machining, sources of heat generation, cutting temperature modeling, measurement of cutting temperature. Cutting fluids; purpose, essential characteristics, selection and methods of application. Cutting tools; methods of failure, mechanics of tool wear, essential properties, assessment of tool life and cutting tool materials.

UNIT-IV

Economics of machining; principal objectives, main parameters and their role on cutting forces, cutting temperature, tool life and surface quality, selection of optimum combination of parameters.

UNIT-V

Causes of vibration and chatter in machining, and their remedy. Mechanics of grinding, characteristics, specification and selection of grinding wheels. Process and wheel parameters in grinding. Grinding forces, grinding fluid applications, grinding ratios and surface integrity. High speed grinding and modern grinding wheels.

References:

1. "Metal Cutting : Theory and Practice" - A. Bhattacharyya , Central Book Publishers, Kolkata
2. "Metal Cutting Principles" - M.C. Shaw, Oxford University Press CBS
3. "Fundamentals of Metal Machining & Machine Tools" - G. Boothroyd, McGraw Hill
4. "Introduction to Machining Science" - G.K. Lal ,New Age International Pub., New Delhi
5. "Machining and Machine Tools" - A.B. Chattopadhyay, Wiley India, New Delhi
6. "Metal Cutting Theory and Cutting Tool Design" - V. Arshinov and G. Alekseev Mir Publishers, Moscow
7. "Manufacturing Science" - A. Ghosh and A.K. Mallik, Affiliated East-West Press Pvt. Ltd., New Delhi
8. "Metal Cutting" - E.M. Trent and P.K. Wright, Butterworth Heinemann Publication
9. "Metal Cutting Mechanics" - N.N. Zorev, Pergamon Press.
10. "Grindings Technology: Theory and Application of Machining with abrasives" – S. Malkin, Ellis Harwood Publication, U.K.
10. "Micromachines" - I. Fujimasa, Oxford University Press.

Course:- M.Tech

Subject:- Materials Management

Max. Marks: a) Internal/Practical- 30

b) External- 70

Year/Semester:- I/II
Subject Code:- WPR-022

Credit Hours		
L	T	P
3	0	0

Syllabus Contents:

UNIT-I

Integrated material management; The material cycle, forecasting material need, procurement and storage; Vendor rating, incoming material inspection and acceptance sampling, Classification of Inventory; ABC, VED, and FSN analysis.

UNIT-II

Standardization, codification and variety reduction, control of level of inventory and frequency of purchase, Assessment of risk of inventory through Beta analysis in uncertain conditions of demand, Kanban inventory, TOC, SCM, MRP and JIT.

UNIT-III

Optimal Control theory in materials management.

UNIT-IV

Material management and Legal Environment; Value Analysis, Price Negotiation Strategies, Information System for Effective materials management, Application of Soft Computing in materials management.

Reference Books:

1. "Manufacturing Planning and Control Systems" - Vollmann, Bery and Whybarn, Tata- McGraw Hill Publication, New Delhi.
2. "Integrated Materials Management" - Plossel.
3. "Integrated Materials Management" - Tersine.

Course:- M.Tech
Subject:- Computational Lab
Max. Marks: a) Internal/Practical- 25
b) External- 25

Year/Semester:- I/II
Subject Code:- WPR-211

Credit Hours		
L	T	P
0	0	4

Syllabus Content:

- 1) Component drafting and drawing through AutoCAD or similar software
 - 2) Stress analysis using standard software such as ANSYS, etc.
 - 3) Use of CAD/CAM software like Solid Edge, ProEngineer, etc. for component manufacture
- Use of a Project Engineering Software, etc.

Course:- M.Tech

Subject:- Disaster Management

Max. Marks: a) Internal/Practical- 30
b) External- 70

Year/Semester:- I/II

Subject Code:- AUD-102

Credit Hours		
L	T	P
3	0	0

Course Outcomes: Students will be able to:

1. Learn to demonstrate a critical understanding of key concepts in disaster risk reduction and humanitarian response.
2. Critically evaluate disaster risk reduction and humanitarian response policy and practice from multiple perspectives.
3. Develop an understanding of standards of humanitarian response and practical relevance in specific types of disasters and conflict situations.
4. Critically understand the strengths and weaknesses of disaster management approaches, planning and programming in different countries, particularly their home country or the countries they work in

Syllabus Contents:

Unit 1: Introduction

Disaster: Definition, Factors And Significance; Difference Between Hazard And Disaster; Natural And Manmade Disasters: Difference, Nature, Types And Magnitude.

Unit 2: Repercussions Of Disasters And Hazards:

Economic Damage, Loss Of Human And Animal Life, Destruction Of Ecosystem.

Natural Disasters: Earthquakes, Volcanisms, Cyclones, Tsunamis, Floods, Droughts And Famines, Landslides And Avalanches, Man-made disaster: Nuclear Reactor Meltdown, Industrial Accidents, Oil Slicks And Spills, Outbreaks Of Disease And Epidemics, War And Conflicts.

Unit 3: Disaster Prone Areas In India

Study Of Seismic Zones; Areas Prone To Floods And Droughts, Landslides And Avalanches; Areas Prone To Cyclonic And Coastal Hazards With Special Reference To Tsunami; Post-Disaster Diseases And Epidemics

Unit 4: Disaster Preparedness And Management

Preparedness: Monitoring Of Phenomena Triggering A Disaster Or Hazard; Evaluation Of Risk: Application Of Remote Sensing, Data From Meteorological And Other Agencies, Media Reports: Governmental And Community Preparedness.

Unit 5: Risk Assessment

Disaster Risk: Concept And Elements, Disaster Risk Reduction, Global And National Disaster Risk Situation. Techniques Of Risk Assessment, Global Co-Operation In Risk Assessment And Warning, People's Participation In Risk Assessment. Strategies for Survival.

Unit 6: Disaster Mitigation

Meaning, Concept And Strategies Of Disaster Mitigation, Emerging Trends In Mitigation. Structural Mitigation And Non-Structural Mitigation, Programs Of Disaster Mitigation In India.

SUGGESTED READINGS:

1. R. Nishith, Singh AK, "Disaster Management in India: Perspectives, issues and strategies" "New Royal book Company.
2. Sahni, Pardeep Et. Al. (Eds.), "Disaster Mitigation Experiences And Reflections", Prentice Hall Of India, New Delhi.
3. Goel S. L. , "Disaster Administration And Management Text And Case Studies" , Deep & Deep Publication Pvt. Ltd., New Delhi.