SREE VIDYANIKETHAN ENGINEERING COLLEGE



(Autonomous) Sree Sainath Nagar, A. Rangampet-517 102

## Department of Mechanical Engineering Lesson Plan

Name of the Subject

Class & Semester

: II B.Tech. II-Sem

: Manufacturing Technology-II (14BT40304)

Name of the faculty Member : Dr.K.C.Varaprasad

Abrasive and Water Jet machining: Types of abrasives, Mechanics of metal

removal, process variables, applications

**Total periods required:** 

and limitations

19

S. No. Topic No. of Book(s) **Topics for self**followed periods study **UNIT – I: METAL FORMING PROCESSES** Nature of plastic deformation T1, T2, R1 1 1 2 2 Rolling, Forging T1,T2, R1 Extrusion, wire drawing, rod and tube 3 2 T1,T2, R1 drawing 2 4 Swaging, tube making T1, R1 2 5 Explosive forming and thread rolling T1,T2, R1 Total periods required: 09 **UNIT – II: SHEET METAL OPERATIONS** 6 Press tool operations 1 T1 ,T2 7 Shearing action, shearing operations 2 T1 ,T2 8 Drawing, draw die design 2 T1 ,T2 9 Spinning, bending, stretch forming 2 T1 ,T2 10 Embossing and coining 2 T1 ,T2 09 **Total periods required: UNIT – III: PLASTIC PROCESSING** Introduction, Properties of plastics 1 T1, T2, R2 11 T1, T2, R2 12 1 Additives in plastics T1, T2, R2 Extrusion of Plastics 13 1 1 T1, T2, R2 14 Injection moulding, Blow moulding Thermoforming, Thermosetting 15 2 T1, T2, R2 Materials **Total periods required:** 06 **UNIT – IV: NON-TRADITIONAL MACHINING METHODS** Need for non-traditional machining 2 16 methods, Classification of modern T1, T2 machining processes Comparative study of different 2 T1, T2 17 processes, Considerations in process selection, Materials-its applications Ultrasonic machining process: 2 18 Mechanics of metal removal, process T1, T2 variables, applications and limitations

2

08

T1, T2

|                               | UNIT -V: ELECTRO-CHEMICAL & T  | HERMA | L REMOVAL PR | ROCESSES |
|-------------------------------|--|-------|--------------|----------|
| 20                            | Fundamentals of Chemical Machining,<br>Electro chemical machining  | 3     | T1,T2        |          |
| 21                            | Electro Chemical Grinding: Mechanics<br>of metal removal, process variables,<br>applications and limitations | 4     | T1,T2        |          |
| 22                            | Electro Chemical Honing and Deburring process  | 2     | T1,T2        |          |
| 23                            | Electric Discharge Machining   | 1     | T1,T2        |          |
| 24                            | Electric Discharge Grinding and Electric<br>Discharge Wire cutting processes                                 | 3     | T1,T2        |          |
|                               | Total periods required:  | 13    |              |          |
| Grand total periods required: |  | 45    |              |          |

## **TEXT BOOKS:**

- T1: P.N. Rao, *Manufacturing Technology*, Vol:1, TMH, 4<sup>th</sup> edition, 2013
- T2: Kalpakjian, Serope, *Manufacturing Engineering and Technology*, Pearson education, 7<sup>th</sup> edition, 2014.

## **REFERENCE BOOKS:**

- R1: Pandey, P.C. and Shah H.S., Modern Machining Process, TMH, 1980.
- R2: V.K. Jain, Advanced Machining Processes, Allied publishers, 2009.