

**RV College of Engineering® , Bengaluru**  
**(Autonomous Institution affiliated to VTU, Belagavi)**  
**Department of Industrial Engineering & Management**

**MANUFACTURING PROCESS (IM234AI)**  
**UNIT-VI (Laboratory Work)**

**SCHEME OF CONDUCT AND EVALUATION**

CLASS: III SEMESTER  
YEAR: 2025\_26

CIE MARKS: (Max.) : 50  
SEE MARKS: (Max) : 50  
SEE: 03 Hrs

| Expt. No.                                | TITLE  | No. of Classes | Max. Marks |
|--|--|----------------|------------|
| 1.                                       | Sketches & uses of tools used in Foundry & Machine shop  | 1              | 20         |
| <b>Part - I - Sand Testing / Foundry</b> |  |                |            |
| 2.                                       | Determination of Grain Fineness Number (GFN) of given clay free sand sample using Sieve shaker.  | 1              | 20         |
| 3.                                       | Evaluation of the Effect of moisture content on shear strength of given green sand.              | 1              | 20         |
| 4.                                       | Preparation of core without using a pattern- Core making.  | 1              | 20         |
| 5.                                       | Preparation of Split (Two pieces) Pattern - Pulley.  | 1              | 20         |
| <b>Part – II – Machine shop</b>          |  |                |            |
| 6.                                       | Plain Turning, Grooving, Taper turning, Knurling, External thread cutting                        | 1              | 20         |
| 7.                                       | Plain Turning, Grooving, Knurling, Chamfering & Forming (Concave & Convex Turning)               | 1              | 20         |
| 8.                                       | Spur Gear cutting using milling machine  | 1              | 20         |
| 9.                                       | Helical Gear Cutting using milling machine   | 1              | 20         |
| 10.                                      | Demonstration of Surface Grinding machine  | 1              | <b>20</b>  |
|  | Demonstration of Non Destructive Testing Equipment's (Ultrasonic & Magnetic Particle Inspection) |                |            |
| <b>TEST</b>                              |  | <b>1</b>       | <b>50</b>  |
| <b>TOTAL</b>                             |  |                | <b>250</b> |

**EVALUATION SCHEME:**

CIE Marks = {Total Class marks (Max.200) + Test marks (Max.50)} Reduced to 50 Marks

*Reference for conceptual foundation: P.N. Rao, Manufacturing Technology: Foundry Forming and Welding, TMH, 2nd Edition, 2003, ISBN: 0-07-463180-2.*

## Particulars of the Experiments Performed

### CONTENTS

| Sl. No.                           | Date | Experiments  | Page No. | Marks Obtained | Signature of Staff |
|-----------------------------------|------|--|----------|----------------|--------------------|
| Part - I - Sand Testing / Foundry |      |  |          |                |                    |
| 1.                                |      | Sketches & uses of tools used in Foundry & Machine shop  | 1 – 32   |                |                    |
| 2.                                |      | Determination of Grain Fineness Number (GFN) of given clay free sand sample using Sieve shaker.  | 33 – 37  |                |                    |
| 3.                                |      | Evaluation of the Effect of moisture content on shear strength of given green sand.              | 38 – 41  |                |                    |
| 4.                                |      | Preparation of core without using a pattern- Core making.  | 43 – 44  |                |                    |
| 5.                                |      | Preparation of Split (Two pieces) Pattern - Pulley.  | 45 – 46  |                |                    |
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| 6.                                |      | Plain Turning, Grooving, Taper turning, Knurling, External thread cutting                        | 47 – 48  |                |                    |
| 7.                                |      | Plain Turning, Grooving, Knurling, Chamfering & Forming (Concave & Convex Turning)               | 49 – 50  |                |                    |
| 8.                                |      | Spur Gear Cutting using Milling Machine  | 51 – 52  |                |                    |
| 9.                                |      | Helical Gear Cutting using Milling Machine   | 53 – 54  |                |                    |
| 10.                               |      | Demonstration of Surface Grinding machine  | 55 – 57  |                |                    |
|                                   |      | Demonstration of Non Destructive Testing Equipment's (Ultrasonic & Magnetic Particle Inspection) | 58 – 59  |                |                    |
| Test(50marks)                     |      |  |          |                |                    |
| Total                             |      |  |          |                |                    |

CIE Marks (Reduced to 50)

$$= \{ \text{Total Class marks (Max.200)} + \text{Test marks (Max.50)} \} / 5$$