**ANURAG GROUP OF INSTITUTIONS**

(Formerly CVSR COLLEGE OF ENGINEERING)

Venkatapur (V), Ghatkesar (M), R. R. Dist.

**(Autonomous)**

**DEPARTMENT OF MECHANICAL ENGINEERING**

Name of the Course: **METTALURGY LAB**

Name of the course coordinator: **Dr. P. RAVIKANTH RAJU**

**Course Outcomes:**

After completion of this course the students will be able to:

1. Obtain & Observe the Micro Structures of various metal samples.
2. Calculate the hardenability of steels by conducting various experiments.
3. Understand the concept of microstructure for various non-ferrous alloys.
4. Obtain the hardness of various Steels.
5. Differentiate the properties between plain steels and heat treated Steels.

**Articulation matrix of CO’s with PO’s and PSO’s**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Program Outcome’s** | | | | | | | | | | | | **PSO’s** | | |
| **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO 10** | **PO 11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| **CO1** | **3** | **3** | **-** | **2** | **-** | **-** | **-** | **-** | **2** | **2** | **-** | **-** | **2** | **2** | **2** |
| **CO2** | **3** | **3** | **-** | **2** | **-** | **-** | **-** | **-** | **2** | **2** | **-** | **-** | **3** | **3** | **3** |
| **CO3** | **-** | **3** | **-** | **-** | **3** | **-** | **-** | **-** | **2** | **2** | **-** | **-** | **2** | **2** | **3** |
| **CO4** | **3** | **3** | **2** | **2** | **-** | **-** | **-** | **-** | **2** | **2** | **-** | **-** | **2** | **1** | **2** |
| **CO5** | **3** | **3** | **-** | **3** | **-** | **-** | **-** | **-** | **2** | **2** | **-** | **-** | **3** | **3** | **2** |
| **AVG** | **3** | **3** | **2** | **2** | **3** | **-** | **-** | **-** | **2** | **2** | **-** | **-** | **2** | **2** | **2** |

***Note*: 1 - Slight**

**2 - Moderate**

**3 - Substantial**

**Signature of the Course Coordinator**