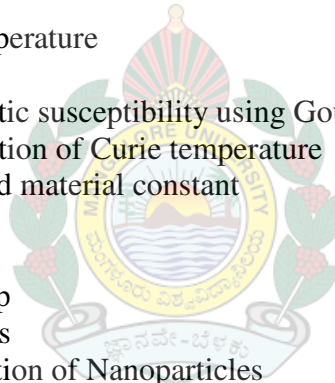


MANGALORE UNIVERSITY
Department of Materials Science
MSc Materials Science

MSP 556: MATERIALS SCIENCE LAB. – VI (3 Credits)

Objectives of the courses: This laboratory course is designed to impart the hands on experience on the measurement of various properties of different materials covered in the theory courses. This course also exposes the students to various simple measurement techniques. Almost all kinds of materials dealt in theory are covered in the laboratory courses with an emphasis on the understanding of the measurement as well as the material properties. As far as possible, within the constraints of the equipment, the experiments are distributed in the semesters where the theory is taught.

Expected course outcomes: The students should gain an understanding of the techniques used as well as the properties of materials dealt in each of the experiment.

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1. Ferromagnetic transition temperature
 2. Hardness testing of materials
 3. Diamagnetic and Paramagnetic susceptibility using Gouy balance
 4. Hysteresis loss and determination of Curie temperature
 5. Reverse saturation current and material constant
 6. Magnetoresistance
 7. Electron spin resonance
 8. Junction voltage and band gap
 9. Study of shape memory alloys
 10. Preparation and Characterization of Nanoparticles