EXPERIMENTAL PHYSICS - I

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IIT Kharagpur

TYPE OF COURSE : Rerun | Core | UG
INTENDED AUDIENCE : B. Sc in Physics / all science

COURSE DURATION : 12 weeks (20 Jul’20- 9 Oct’20)
EXAM DATE : 17 October 2020

INDUSTRIES APPLICABLE TO : The industries of electronics, telecommunication and instrumentation will specially recognize this course.

COURSE OUTLINE :
The course is designed in three modules:
(I) Experimental Physics-I : Experiments on Mechanics, General properties of matter, Thermal properties of matter, Sound, Electricity and magnetism. (II) Experimental Physics-II : Experiments on Optics and Modern Physics. (III) Experimental Physics-III : Experiments on Solid state physics and Modern Optics. This course is not only suitable for undergraduate students of physics, rather it is compulsory for all undergraduate students of science, engineering and technology, who have to deal with instruments in any point of time during their career and profession. This course will make the student understand the working principle of many common devices through their applications in different experiments

ABOUT INSTRUCTOR:
After completion of B.Sc (Hons) in Physics and M.Sc in Physics in 1994, Prof. Amal Kumar Das did his Ph.D on experimental physics and material science from Institute of Physics, Bhubaneswar. After completing post-doctoral research on experimental physics from Paul Drude Institute, Berlin, Germany, he joined as a Faculty in Department of Physics, Indian Institute of Technology Kharagpur in 2004 and taught different subjects to UG and PG students including experiments in teaching laboratory. Prior to joining here, he took experimental physics laboratory for four years to B.Sc students in an undergraduate college named Malda College under North Bengal University, West Bengal.

COURSE PLAN :
- **Week 01** : Basic tools in a laboratory
- **Week 02** : Basic apparatus in a laboratory
- **Week 03** : Basic analysis of data in a laboratory
- **Week 04** : Experiments on Mechanics
- **Week 05** : Experiments on General properties of matters
- **Week 06** : Experiments on Thermal properties of matter
- **Week 07** : Experiments on Thermoelectricity and Sound
- **Week 08 - 10** : Experiments on Electricity
- **Week 11 - 12** : Experiments on electromagnetism