



Indian Academy of Sciences
Bangalore



Indian National Science Academy
New Delhi



The National Academy of Sciences, India
Allahabad

Science Academies' Refresher Course on Classical Mechanics and Electromagnetism

8–20 December 2014

Sponsored by

**Indian Academy of Sciences, Bangalore
Indian National Science Academy, New Delhi
The National Academy of Sciences, India, Allahabad**

In collaboration with

SDM College, Ujire, Karnataka

A Refresher Course on Classical Mechanics and Electromagnetism for college/university teachers/research scholars will be held at the Department of Physics, SDM College, Ujire, Karnataka during 8–21 December 2014. The Course is primarily aimed at teachers involved in teaching classical mechanics and electromagnetism at the UG/PG level. A few seats may also be available for research scholars in physics. The Course will cover the basic and advanced topics of classical mechanics and electromagnetism, through lectures and tutorials. College/university teachers having at least a Master's Degree in Physics are particularly encouraged to apply.

Topics: Most of the topics in standard UG/PG level course syllabus will be covered. There will be four modules:

- Module 1:** Newton's laws, Lagrangian mechanics: action principle, Euler–Lagrange equations, Noether's theorem, motion in non-inertial frames, special relativity.
- Module 2:** Phase space and portraits, Hamiltonian formulation, small oscillations, normal modes, Poisson brackets and canonical transformations, rigid body motion.
- Module 3:** Electrostatics, Magnetostatics; Faraday's law of induction.
- Module 4:** Electrodynamics; Maxwell's equations in free space, EM waves, polarization (plane and circular); Maxwell's equations in media, reflection, refraction; Poynting vector and electromagnetic energy density.

Resource persons

Professors M. Lakshmanan (Bharathidasan University, Tiruchirappalli), H. S. Mani (Chennai Mathematical Institute), G. Rajasekaran (The Institute of Mathematical Sciences and Chennai Mathematical Institute) and Govind Krishnaswami (Chennai Mathematical Institute).

Course Director: Professor M. Lakshmanan

Course Co-ordinator: Dr Chetan Rao

Outstation participants will be reimbursed three-tier A/c train fare to Ujire and back by the shortest route. Participants will also be provided with boarding and lodging during the Course.

Teachers/research scholars who wish to participate should send their application online using the following link.

<http://web-japps.ias.ac.in:8080/Refreshcourse/RCCM.jsp>

A printed copy of the application through the Head of the Institution should be sent by speed post to: **Prof. M. Lakshmanan**, Center for Nonlinear Dynamics, Bharathidasan University, Tiruchirappalli 620 024, India.

For any further query, please e-mail to: lakshman.cnld@gmail.com

Last date for the receipt of applications: **10 September 2014.**