

FOUNDATION COURSE IN PHYSICS AND CHEMISTRY OF THE EARTH

sponsored by
Indian Academy of Sciences, Bangalore

in collaboration with
**National Centre of Experimental Mineralogy and Petrology,
University of Allahabad, Allahabad**

7–27 November 2005

Objective: The course is aimed at sharpening the conceptual foundations of young scientists in the Science of the Earth, by engendering capabilities for understanding and analysing planetary systems and processes generally and that relating to the earth in particular, in a quantitative manner. It is accordingly designed to focus on the most basic aspects of physical and chemical principles and their numerical application in calculating the thermodynamic conditions of critical earth processes such as lithospheric stretching leading to development of sedimentary basins, physics and chemistry of melts, mineral phases and their transformations through the earth's crust and mantle, amongst other topics. This Course will focus on the following 3 topics and their analytical and numerical applications to Earth Science problems:

Continuum Mechanics, Thermodynamics, and Physico-chemico Mineralogy.

Instructional Structure: The course will be for 3 weeks (18 working days) and on each working day, there will be two lectures of 75 min each followed by two tutorials of 90 min each devoted to conceptual explorations and problem solving.

Eligibility: The course is open to any teacher researcher or graduate student in any field who possesses the pre-requisite background in mathematical physics, thermodynamics and the chemistry and rheology of minerals, outlined below. However, in view of the emphasis on conceptual explorations and problem solving, the course will be restricted to 15 participants who possess a strong motivation for analytical and numerical exercises.

Pre-requisite Background: Basic algebra, matrices, calculus including vector calculus; mechanics, chemical bonds and energetics; thermodynamics; mineralogy and some familiarity with geological structures; plate tectonics.

Selected participants will be provided with local hospitality and actual train fare for travel by three-tier AC or bus fare by the shortest route.

**Those wishing to be considered for selection to participate in the course, should send their application to the Course Coordinator, Professor Alok K. Gupta, Director, National Centre of Experimental Mineralogy and Petrology, 14 Chatham Lines, University of Allahabad, Allahabad 211 002 (Tel: 0532-2250840, Fax: 0532-2644951; e-mail: ncempau@sancharnet.in).

**Applications must include the following information: (i) Name, date of birth, full postal and email address, telephone number(s) (ii) Qualifications and nature of current activity supported by appropriate documents (iii) a clear statement about background knowledge of the pre-requisites, and (iv) a statement in 200 words to indicate the scientific motivation for participating in this course.

Last date for receipt of applications: **15 September 2005.**