Course Coordinators

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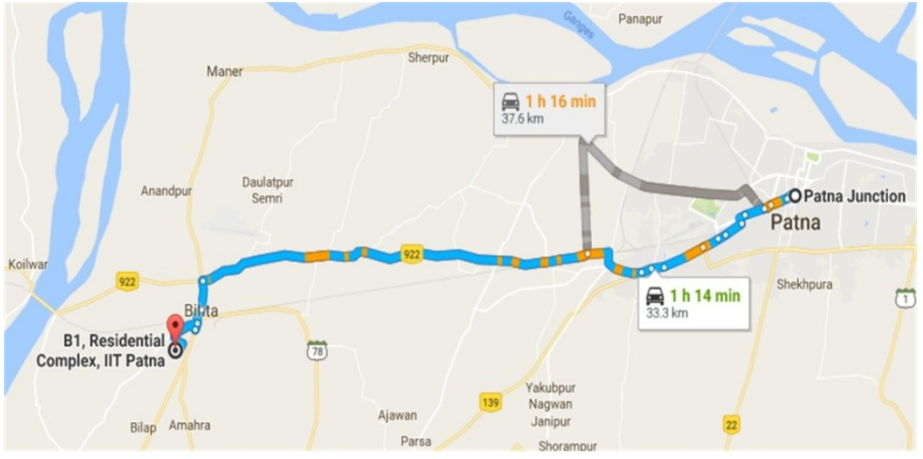
Travel : Reaching IITP

By Rail: **IIT Patna Campus is about 35kms from Patna Junction, 24kms from Danapur Station and 38kms from Rajendra Nagar Terminal. You can find direct trains to any one of these stations from all parts of the country such as Delhi, Mumbai, Kolkata, Chennai, Hyderabad, Bangalore, Lucknow, Kanpur, Guwahati, Puri, and Vasco-de-Gamma among many others.**



Continuing Education Programmes

IIT Patna

Certificate Course on

Materials Science

Department of Materials Science and Engineering,
Indian Institute of Technology, Patna
Bihta, Bihar, India

About the Course

Materials science is a common course for most engineering disciplines and the broad objective of this course is to cover the basic fundamentals of materials science and engineering. This course is intended to train personnel from industries and manufacturing industries to tackle various issues related to materials failures, its causes and the several ways of controlling it. Steels are major materials of construction for all types of industries. Emphasis of this course will be given on the ***different types of steel, Iron-Carbon phase diagrams and its heat treatment***. Further, the underlying mechanism of ***fatigue*** and ***creep*** and its correlation with ***dislocation*** will be understood in details.

These steel need to resist corrosion in order for the structures to be safe, reliable and provide extended service life as corrosion is one of the major forms of failures. ***Different type of corrosion***, factors affecting them and the techniques to control the rate of corrosion will be discussed. In order to enhance the properties of materials, ***composite materials*** and ***nanomaterials*** are attracting a lot of attention now a day. Basic insight on the composite materials and the nanomaterials will be explored. The participants will be exposed to both theoretical and experimental aspects of teaching materials science.

Overview of the Course
June 5-11, 2017

Day 1: Types of Steel, Phase Diagram
Day 2: Iron Carbon Diagram, TTT Curve
Day 3: CCT Curve and Heat Treatment of Steel
Day 4: Imperfection in Solids (Dislocations)
Day 5: Stress Strain diagram of steel, Factors affecting Fatigue, Creep
Day 6: Corrosion, Type, Cause, Prevention
Day 7: Composite Materials, Nanomaterials, Examination (2 hour)

Participants will get the opportunity to do the lab work on properties of materials (Hardness and Elastic Modulus, toughness etc.). In addition they will be exposed to State-of-the-art plasma spray coating lab for composite coating synthesis.

About IIT Patna

Indian Institute of Technology Patna is an autonomous institute of education and research in science, engineering and technology located in Bihta, 35 km from Patna. As of today, IIT Patna has 10 academic departments that offers B.Tech, M.Tech and PhD programmes. The faculties of this institute come with academic and research training from various institutes of excellence within the country and abroad. The recent publication records of the faculty with several practical constraints appear to be outstanding. It includes many reputed national and international journals.

Research activity in IIT Patna has been published in high quality and peer-reviewed national and international journals. Please browse individual faculty member web-page for more information. Faculty members of IIT Patna have been also participating in national and international conferences of repute.

Registration Process

Registration is required for participating to this course. Number of seats is limited 40. Seats will allocated first come first served basis.

Selected candidates will be confirmed through Email.

Registration Deadline: **May 20, 2017**

For Any Query Contact

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