

Whom will the course benefit:

The course will benefit college teachers in the disciplines of metallurgy, material science, physics and chemistry who are interested in x-ray diffraction and its applications. This would also benefit engineers in the segments of manufacturing and quality control of materials.

Course Objectives:

To expose the faculty members and practicing engineers to the fundamentals and applications of x-ray diffraction.

Course Contents:

- Concepts of crystallographic symmetry, lattice planes, directions, Miller indices of planes; description of (simple) crystal structures.
- Basics of diffraction, Bragg’s law, Debye Scherrer and Bragg-Brentano para-focusing powder diffraction geometry.
- X-rays generation from laboratory and synchrotron sources.
- Monochromatization of x-rays, detection of x-rays.
- Scattering of x-rays by crystals, atomic scattering factor, structure factor, factors influencing Bragg intensity in powder diffraction patterns.

Applications:

- Quantitative estimation of phase fractions, estimation of crystallite size and strain
- Estimation of residual stresses

Course Organization:

The course will consist of lectures by IISc faculty.

Eligibility:

The course is meant for faculty of AICTE – recognized engineering colleges. Selected teachers will be paid TA at actual subject to the limit of Three tier AC train/bus fare by the shortest route from the place of work to Bengaluru and back. **However, the maximum TA payable is Rs.3000/-.** They will be provided with a daily allowance of Rs.500/- per day (for 5 days only) towards boarding and lodging as per QIP rules, and will be supplied with the course materials. **The lodging charges will be Rs.300/- per day. Local participants will be paid DA @ Rs.150/- per day for 5 days.**

In addition, a few seats are available on payment basis for non-sponsored (self-support) teachers, scientists from R&D organisations, practicing engineers from industry and others interested in this course. **A course fee of Rs.10,000/- will be charged to these participants.** This will entitle them to participate in the course and receive the course material. Single room **accommodation** is available on the Institute campus at the **Hoysala Guest House**. The participants have to request in advance along with the registration form for such accommodation. The lodging charges will be **Rs.1000/- per day**, for self-sponsored college teachers and **Rs.1500/- per day** for other participants, subject to availability of accommodation

**CENTRE FOR CONTINUING EDUCATION
Indian Institute of Science
Bengaluru – 560 012**

**QIP Short Term Course
On**

**“Introduction and Application of
X-Ray Diffraction”**

6 – 10 February, 2017

Registration Form

(Please mail to reach before 06th January, 2017)

1. Name.....
2. Age:..... Sex: Male/Female
3. Office address
.....
.....
.....
4. Landline No. with STD code:.....
5. Mobile No.
6. Email ID:.....
7. Academic Qualifications
Degree subject year University
Diploma/B.Sc./B.A.....
B.E/B.Tech/M.Sc.
M.E/M.Tech./M.Phil.....
Ph.D. Completed/Pursuing/Intend
pursuing:.....
Thesis title/Proposed Research Area:.....
.....
.....
8. Teaching Experience.....(Years)
9. Industry Experience(Years)

10. Courses taught/professional responsibilities.....
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.....

11. Accommodation required Yes / No

12. Self-support candidate : Rs. 10,000/-
Demand Draft No.....dated.....

I agree to abide by the rules of the QIP courses. If selected, I shall participate in the course for the entire duration.

Date:
Place: Signature

The applicant Mr/Ms.....
.....
from our institution will be permitted to attend the QIP Short Term Course on “**Introduction and Application of X-Ray Diffraction**” to be held during **6-10 February , 2017** at the Indian Institute of Science, Bengaluru, if selected. He/she will be granted necessary leave of absence.

Place:
Date: Signature of Head of the Department

Signature and Seal of the Principal of the Institution

(Xerox copy of this form may also be used)

Please mail the filled-in application form to:

The Officer-in-Charge,
Centre for Continuing Education
Indian Institute of Science
Bengaluru - 560 012
Telephone: 080-23600911, 22932055/2491
Email: so@cce.iisc.ernet.in/
office@cce.iisc.ernet.in

To reach on or before: 06th January, 2017

Intending participants may use the attached application form or a xerox copy of the same. Applicants from AICTE recognized colleges are required to submit their applications sponsored by their colleges.

Non-sponsored (self-support) teacher applicants /others should send their application along with a **DD for Rs.10,000/-** drawn in favour of “**Registrar, Indian Institute of Science, Bengaluru - 560012**” payable at Bengaluru.

Deadlines:

Receiving completed application: **06th January, 2017**

Intimation of selection: **12th January, 2017**

**QIP Short Term Course
On**

**“Introduction and Application of
X-Ray Diffraction”**

6 – 10 February, 2017

Coordinators

**Prof. Rajeev Ranjan
&
Prof. Satyam Suwas
Dept. of Materials Engineering**

**Sponsored by
AICTE, NEW DELHI**



**Centre for Continuing Education
Indian Institute of Science
Bengaluru – 560 012
Website: cce.iisc.ernet.in**