

*Completed registration form should be sent to the following address:*

**Prof. Ambarish Kunwar/Prof. Dulal Panda**  
**Course Coordinator**

Department of Biosciences and Bioengineering,  
IIT Bombay, Powai, Mumbai – 400 076.

Phone: (022) 2576 7760

Fax: (022) 2572 3480

Email: akunwar [at] iitb.ac.in

#### **Important Dates**

Last date for receipt of registration: **Oct 15, 2017**

Notification of acceptance: **Oct 30, 2017**

Course dates: **Dec 11-15, 2017**

#### **Notes:**

- Incomplete application forms will not be entertained.
- For multiple registrations, copy the form or type in the given format.
- Registration form can be also downloaded from the following course website

<http://www.bio.iitb.ac.in/~akunwar/qipmbt2017/>

#### **Venue for Course:**

Course will be held at VMCC, IIT Bombay.

#### **Date & Time of Registration:**

Dec 11, 2017, 9.00 AM at course venue, IIT Bombay.

#### **REGISTRATION**

There is no registration fee for the course. All short-listed candidates are required to confirm their participation by sending a **Demand Draft of Rs. 2000/- in the name of "Registrar IIT Bombay"**. The above amount will be refunded to the participant if he / she attends the course. In case a participant does not attend the course, the above amount will be forfeited.

Candidates should complete either enclosed registration form or registration form downloaded from website and prepare one page write-up stating the reasons to attend this course. Candidates should send the registration form and one page write-up by mail, email or fax to the Coordinator. Confirmation of eligible candidates will be on a first come first served basis up to a maximum of 60 candidates.

The completed registration forms should be received by the Coordinator latest by **Oct 15, 2017**.

For any further information regarding QIP programs at IIT Bombay, please contact:

Office of  
Continuing Education & Quality Improvement  
Programme  
IIT Bombay, Powai, Mumbai-400 076  
Phone: (022) 25767048  
Email: qip@iitb.ac.in  
For further details: <http://www.qip.iitb.ac.in>



**Quality Improvement Programme (QIP)**

**Short Term Course**

# **MODERN BIOPHYSICAL TECHNIQUES**

**December 11 - 15, 2017**

*Course Coordinator*

**Prof. Ambarish Kunwar**  
**Prof. Dulal Panda**

Department of Biosciences and Bioengineering

Office of  
Continuing Education &  
Quality Improvement Programme  
Indian Institute of Technology Bombay  
Powai, Mumbai - 400 076

## Introduction

The horizon of modern biosciences and bioengineering are rapidly expanding due development of various new biophysical manipulation and measurement techniques. These advances has allowed experimentalists to ask and answer questions not even dreamed of earlier. This course is aimed at providing an overview of the diversity of modern biophysical experimental techniques used to study of biological systems ranging from molecular to the cellular levels.

## Broad Objectives

The course is intended for faculty members of engineering colleges, engaged in teaching biology courses, who seek an introduction to modern biophysical experimental techniques. Due to the interdisciplinary nature of the course, basic knowledge of physics and mathematics is expected but strong attempts will be made to give an intuitive understanding of the mathematics and physics involved.

## Course Contents

The topics covered in this course include fluorescence microscopy, confocal microscopy, NMR spectroscopy, Fluorescence Resonance Energy Transfer (FRET), Fluorescence-activated cell sorting (FACS), optical tweezers and bio-AFM. This course also involves lab visit to various laboratories of IIT Bombay and possibly to nearby institutes which have been using these modern biophysical techniques.

## Teaching Faculty

The core teaching faculty will be from the Department of Biosciences and Bioengineering who have been using these biophysical techniques in their day to day research. Subject experts from other institutes will be invited for special lectures.

## Eligibility

Faculty members of degree level engineering colleges recognized by AICTE, are eligible to attend the course. The faculty member should be teaching or should have taught biology courses. Due to the interdisciplinary nature of the course, basic knowledge of physics and mathematics is expected.

## Lecture Notes

Hard copies of the lecture notes/presentations will be made available to participants at the end of lecture/presentation.

## Course Evaluation

Successful participants would be awarded 'Course Completion Certificate'.

## Transport, Boarding & Lodging

Participants are entitled for Second Class (Sleeper Class) or III AC railway fare to and fro by the shortest route from college to IIT Bombay. All participants will be given auto fare from Kanjurmarg/ Andheri to IIT on the dates of arrival and departure. Local participants will be paid second class railway fare or BEST Bus fare.

Boarding and lodging will also be provided free of cost. Accommodation will be provided in the students Hostels or Guest House on sharing basis. Since accommodation is limited, family members of the participants cannot be accommodated.

## QIP Short Term Course on MODERN BIOPHYSICAL TECHNIQUES

*December 11 - 15, 2017*

### Registration Form

Name\* (in block letters): (Mr/Mrs/Ms) \_\_\_\_\_

Designation\*: \_\_\_\_\_

Organization\*: \_\_\_\_\_

Mailing Address\*: \_\_\_\_\_

Telephone: \_\_\_\_\_ Mobile\*: \_\_\_\_\_

Fax: \_\_\_\_\_

Email\*: \_\_\_\_\_

Educational Qualifications\*: \_\_\_\_\_

Discipline/Specialization\*: \_\_\_\_\_

Accommodation Required\*: YES / NO

Exposure to 10+2 level Physics/Maths\*: YES/NO

Whether teaching/ taught any biology course\*: YES/NO

Name of course (only if answer is YES)\*: \_\_\_\_\_

Signature of Applicant\*:

AICTE ID\*: [please click here](#)

Sponsorship & signature of Head of the College / Institute (with date & seal)\*.

**(IMPORTANT: BY SIGNING ABOVE HEAD OF THE COLLEGE/INSTITUTE CERTIFIES THAT APPLICANT IS A FACULTY MEMBER OF DEGREE LEVEL ENGINEERING COLLEGE RECOGNIZED BY AICTE AND AICTE PERMANENT ID WRITTEN ABOVE IS CURRENTLY VALID).**

\* Required fields otherwise application will be rejected.