

AICTE Sponsored Short Term Course

on

## Product Design and Engineering

October 21<sup>st</sup> to 25<sup>th</sup>, 2013



Organized by

Center for Continuing Education  
&  
Department of Engineering Design  
Indian Institute of Technology Madras  
Chennai - 600 036

<http://ed.iitm.ac.in/~gsaravana/pd2013.htm>

### BACKGROUND

In the current era, sustainable product development involves the efficient evaluation of multiple alternatives within the constraints of time and cost. Owing to the complex nature of modern technology, often a large team is required to design and develop a major new product. This introduces additional issues of organization and communication. To succeed in a new venture, the design process must be planned carefully and executed systematically. In particular, an engineering design method must integrate the many different aspects of design in such a way that the whole process becomes logical and comprehensible. To that end, the design process must be broken down, first into phases, and then into distinct steps, each with its own working methods. This course aims to present a systematic engineering design process encompassing the latest developments in theory and practice. The lab components of the course will impart hands-on experience in design practices.

### COURSE CONTENTS

- Product Design - Introduction
- Functional and Conceptual Design
- Aesthetics and Art Appreciation
- Role of CAD in Design
- Reverse Engineering and Rapid Prototyping
- Design for X
- Detail Design
- Materials and Manufacturing
- Product Design Lab Practices
- Role of FEM in Design
- Concepts of Optimal Design
- Sustainability in Design
- Design Competition

### FACULTY

Faculty members of IIT Madras and guest faculty members from other premier academic institutions and business establishments will deliver lectures.

### ABOUT THE DEPARTMENT & FACILITIES

The Department of Engineering Design is the newest department at IIT Madras. The first of its kind in the country, the department offers a B.Tech. specialization in Engineering Design and M.Tech. specializations in Automotive Engineering and in Biomedical Design. It has excellent facilities for carrying out theoretical and experimental research in the areas of automotive systems, vehicle dynamics, mechatronics, control systems, robotics, ergonomics, CAD, additive manufacturing, product design and biomedical device development.

Product design and development for real time industrial applications is one of the focal areas of this department. Computer aided design tools are widely used in the design process. The department has a computational facility with several computing workstations, and software like Inventor®, MATLAB®, Algor® for digital sculpting, FE analysis, and design optimization etc. Several labs, including the robotics lab, smart materials lab, image processing lab and product design lab, use the design tools. These labs place a strong emphasis on research and support research oriented M.S. and Ph.D. programs.

### COURSE MATERIAL

Each registered participant will be provided with a set of comprehensive lecture notes.

### COURSE DURATION & VENUE

The course will run for five days, during **21<sup>st</sup> - 25<sup>th</sup>, October 2013**. Lectures will be held at the Industrial Consultancy and Sponsored Research (IC&SR) building, and Dept. of Engineering Design, IIT Madras, Chennai.

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***Application Form***

(Note: Use this form only if you are not able to complete the online application form available in the course website.)

- **Name (block letter):**
- **Designation & pay scale:**
- **Organization:**
- **Address for communication:**

**Ph. No. :**  
**E-mail :**  
**Fax :**

- **Highest Academic Qualification:**
- **Specialization:**
- **Experience (in years):**  
(a) Teaching (b) Industrial
- **Amount of TA required as per entitlement mentioned in this brochure (only for AICTE approved college teachers):**
- **Accommodation: Required/ Not required**

All data provided are true to the best of my knowledge and belief. Kindly register me for the short term course on “Product Design and Engineering” to be held at IIT Madras.

Place:

Date: Signature of the applicant

**SPONSORSHIP**

Prof./Dr./Mr./Ms./Mrs./\_\_\_\_\_ is an employee of our organization and his/her application is hereby sponsored. The applicant will be permitted to attend the continuing education program “Product Design and Engineering” at IIT Madras during October 21-25, 2013.

Date: Signature of Sponsoring Authority  
Designation:

Official Seal:

Provisionally selected candidates have to send a DD for ₹ 500 as caution-money:

DD No. Date:  
Bank:  
Amount:

Signature of the Applicant

**The duly sponsored application form should be posted to:**

**Dr. Palaniappan Ramu**  
Course coordinator, STC on Product Design,  
Department of Engineering Design  
Indian Institute of Technology Madras  
Chennai – 600 036, Tamilnadu  
Ph. No.: 044 2257 4730  
Fax No.: 044 2257 4732  
Email: [pd2013.iitm@gmail.com](mailto:pd2013.iitm@gmail.com)

**ELIGIBILITY**

The course is open to faculty members in engineering colleges approved by AICTE, with background in Mechanical and related engineering disciplines. **No course fee** is charged to participants sponsored by AICTE approved institutions. However, ₹ 500 caution-money has to be sent by the provisionally selected participants, which will be returned only when participant joined the course.

All payments are to be made by demand drafts only, drawn on any nationalized bank in favour of **The Registrar, IIT Madras, payable at Chennai.**

**FINANCIAL ASSISTANCE**

Limited number of participants from AICTE recognized engineering institutions will be eligible for to and fro railway fare via shortest route in 3-Tier AC class and free lodging and boarding in the institute guest house during course period. Candidates attending the course in full only will be eligible for TA and DA.

**BOARDING AND LODGING**

Boarding and lodging facilities will be provided for the selected candidates from AICTE approved institutions in the Taramani guest house at IIT Madras. Accommodation will be on a twin sharing basis only.

**IMPORTANT DATES**

Last date for applications	: 20-09-2013
Intimation of selection (through email / FAX)	: 25-09-2013
Confirmation of participation	: 30-09-2013

**STC details, application and updates:**

<http://ed.iitm.ac.in/~gsaravana/pd2013.htm>

**Center for Continuing Education, IITM:**

<http://www.cce.iitm.ac.in/>

**Department of Engineering Design, IITM:**

<http://ed.iitm.ac.in/>

**Course coordinators:**

**Dr. Palaniappan Ramu:**<http://ed.iitm.ac.in/~palramu>

**Dr. Sandipan Bandyopadhyay:** <http://ed.iitm.ac.in/~sandipan>

**Dr. G. Saravana Kumar:**<http://ed.iitm.ac.in/~gsaravana>