

## About Electronics & ICT Academy at PDPM IIITDM Jabalpur

The Ministry of Electronics and Information Technology, Government of India has instituted seven Electronics and ICT Academies with one academy at PDPM IIITDM Jabalpur. The primary objective of the Academy is to prepare manpower for two important missions - 'Digital India' and 'Make in India'. The Academy aims at scalable training programmes in niche areas of Electronics and ICT for the development of required knowledge base, skills and tools to unleash the talent of the Indian population. In addition to the faculty development programmes on fundamental and advanced topics, the Academy conducts customized training programmes for the corporate sector and research promotion workshops in emerging areas. The Academy is envisioned to become a central hub of activities on training, research, consultancy work and entrepreneurship programmes.

## About PDPM IIITDM Jabalpur

PDPM IIITDM Jabalpur was established in 2005 with a focus on education and research in IT-enabled Design and Manufacturing. Since its inception, PDPM IIITDM Jabalpur has been playing a vital role in producing quality human resources for contribution in India's mission of inclusive and sustainable growth. The Institute offers undergraduate, postgraduate and PhD programmes in Computer Science and Engineering, Electronics and Communication Engineering, Mechanical Engineering, Design and PhD programmes in Mathematics, Physics and Literature. Under IIIT act, the Institute has been declared as an Institute of National Importance in January 2015. The Institute campus is being developed on 250 acres of land close to Dumna Airport, Jabalpur. The Institute is 10 km from the main railway station and 5.5 km from Dumna Airport, Jabalpur.

## Faculty Development Programme Finite Element Method and Practice using ANSYS®

**Who can attend:** Programme is open to faculty from all colleges and universities preferably from the states of Madhya Pradesh, Chhattisgarh, and Maharashtra. Faculty members from other states are also eligible. Industry personnel working in the concerned/allied discipline may also apply. **Limited seats are available for research scholars.**

### How to apply:

**Online:** The participants may log on to the website [ict.iiitdmj.ac.in](http://ict.iiitdmj.ac.in) and fill up the application form selecting the name of the course. One may also send a scanned copy of your completed application form to us. Application format may be downloaded from the website (Also given in this brochure). Print out of the filled in application form duly endorsed by the forwarding authority and a demand draft of the applicable amount (as given below) in favour of 'Electronics and ICT Academy, IIITDMJ' payable at Jabalpur may be sent to the address given below. No Travelling Allowance will be paid by the Academy.

### Important Dates:

**Last Date of Online Registration: March 25, 2019**

**Course Dates: April 06 – 10, 2019**

### Registration Fee :

Academic: Rs. 2000/- (Gen/OBC), Rs. 1000/- (SC/ST)

Industry: Rs. 5000/-

(Includes lunch + tea)

Accommodation charges (if needed):

Rs. 1500/- (includes breakfast + dinner in the hostel)

Accommodation is also available in Institute Guest House (Visitors' Hostel) on payment basis

### Contact us

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Electronics and ICT Academy

PDPM Indian Institute of Information Technology,

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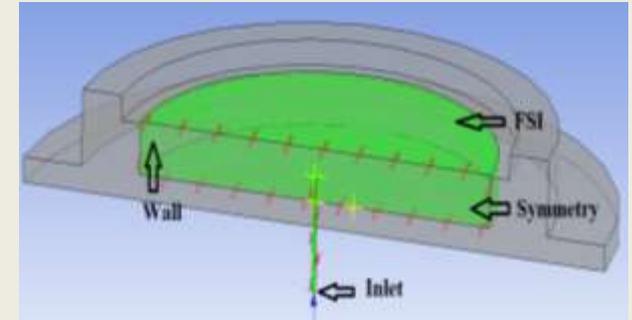
**Email:** [academyiiitdmj@gmail.com](mailto:academyiiitdmj@gmail.com)

**Website:** [ict.iiitdmj.ac.in](http://ict.iiitdmj.ac.in)

## Faculty Development Programme

## Finite Element Method and Practice using ANSYS®

April 06-10, 2019



## Seamless Learning Opportunities

Electronics and ICT Academy  
An Initiative of  
Ministry of Electronics and Information  
Technology,  
Government of India



PDPM  
Indian Institute of Information  
Technology,  
Design and Manufacturing,  
Jabalpur,  
Dumna Airport Road,  
Jabalpur 482005



# Finite Element Method and Practice using ANSYS® April 06 - 10, 2019

## Course objectives:

This course is designed to provide exposure to the fundamentals of the Finite Element Method (FEM) and its implementation using ANSYS®. ANSYS software is used in a variety of engineering fields to model structures, fluids, electronics and system simulation. In this course, participants will learn how a problem can be formulated and solved using the finite element technique. The hands-on practice session will be conducted on ANSYS® to apply the method to an engineering problem. The course will be more focused on the solution to the problems related to Mechanical and Civil Engineering domain.

The aim of the course is to enable the participants to understand the fundamentals of the FEM and how it can be applied to obtain approximate solutions to real-world problems using ANSYS®.

## Resource Persons

1. Prof. Aparajita Ojha Professor, PDPDM IIITDM Jabalpur
2. Prof. Vijay Kumar Gupta Professor, PDPDM IIITDM Jabalpur
3. Dr. Shivdayal Patel, Assistant Professor, PDPDM IIITDM Jabalpur

## Course contents

**Introduction to FEM:** Need of finite element method, direct method, steps involved in FEM, field and boundary conditions

**Finite Element Formulation:** Weighted residual method, variational principle, the principle of minimum potential energy.

**Finite Element in 2D:** 2D elements, completeness of polynomials, CST and LST elements, Lagrange and 'serendipity' family of elements, Quadrilateral elements.

**Isoparametric Elements:** Natural coordinate system and isoparametric elements, Concepts and examples of Numerical Integration.

**Convergence:** Convergence criteria, Discretization error and convergence rate, Non-conforming elements and the patch test.

**Dynamic Considerations:** Eigenvalues and eigenvectors evaluation, Generalized Jacobi method; Tri-diagonalization and other methods.

### Recent Advances in FEM

Hands-on lab sessions on industry standard FEA software Package ANSYS.

## Course Coordinators

**Prof. Vijay Kumar Gupta**  
Email: [vk Gupta@iiitdmj.ac.in](mailto:vk Gupta@iiitdmj.ac.in)  
+91-761-2794413

**Dr. Shivdayal Patel**  
Email: [shivdayal@iiitdmj.ac.in](mailto:shivdayal@iiitdmj.ac.in)  
+91-761-2794428

Website: [ict.iiitdmj.ac.in](http://ict.iiitdmj.ac.in)

## Application Form

Name of the Course / Programme: **Finite Element Method and Practice using ANSYS®**

Name of the Applicant (first, last): .....

.....

Gender : M / F / T      Category: GEN/SC/ST/OBC

Designation: .....

Preferred Venue for the Course: IIITDM Jabalpur / MANIT Bhopal

Name and Address of the Organization/Institute/College:

.....

.....

City/town:..... Email: .....

Alternate email (if any): .....

Phone Number: .....

Mobile Number: .....

Do you need accommodation? (Yes/No):

Note: Accommodation and meal facility will be available only from the evening of April 05 to the morning of April 11, 2019.

DD Number: ..... Date: .....

Issuing Bank: ..... payable at: .....

Signature of the Applicant

I hereby agree to relieve Mr./ Ms./ Dr.....  
..... in case she/he is selected  
to attend the programme.

Signature and Seal of the Forwarding Authority

Name .....

Designation .....