

## Motivation and Course Objectives

Theory of Machines/Kinematics and Dynamics of Machines subject is usually taught, along with lab/practical sessions, at UG and Diploma levels of engineering courses. But, to make an engineer to be more effective and efficient in today's scenario, it is also required to train engineering students to apply the basic knowledge to achieve advanced designs using tools and techniques that are faster and more efficient. Therefore, this course is aimed to train current as well as prospective (i.e., UG/PG students) faculty members about learning and teaching this course using simulation tools, such as Motion View and Motion Solve, MATLAB. This will help in producing engineers who are well equipped with the tools and techniques being used in the industries. With the above said motivation, it is expected that the participants would be able to design and analyze (kinematically and dynamically) a mechanism or any multibody systems using Motion View and Motion Solve, MATLAB, and also to visualize motions of moving members of a machine, and understand their correlations and would be able to determine the most important kinematic/dynamic design parameters.

## Course Contents

The short-term course aims to include the following topics:

- ✦ Introduction to Kinematic Diagrams, Degree of Freedom, Four-bar Linkages, Grubler's Criteria Linkages: Position Analysis, Linkages: Velocity and Acceleration Analysis.
- ✦ Introduction to Kinematics and Dynamics & methods of synthesis and analysis of machine components and systems.
- ✦ Design a mechanism / machine to satisfy given motion (or other performance) requirements
- ✦ Hands on Training for building and analyzing multibody systems using Altair Hyper-works Motion View and Motion Solve software and MATLAB

## About MNIT



Malaviya National Institute of Technology (MNIT) Jaipur is one of the NITs established by Ministry of Human Resource Development (MHRD), Government of India (GOI). Earlier, the Institute, known as MREC Jaipur, was established in 1963 as a joint venture of the GOI and the Government of Rajasthan. Later in 2002, the college was given the status of National Institute of Technology, and on 15 August 2007, proclaimed Institute of National Importance through Act of Parliament. MNIT campus spreads over 325 acres of lush green area in the prime location of Jaipur city. At present, in addition to the research, consultancy and developmental activities, the Institute offers UG and PG level courses (M.Tech./M.Sc. & Ph.D.) to about 4500 students in almost all leading fields of engineering, technology, management and sciences.

## About Mechanical Engg. Deptt.

Mechanical Engineering Department started functioning in 1963 at the start of the institute. The department offers a four-year course leading to the Bachelor's Degree in Mechanical Engineering. It also offers four full-time and/or part-time postgraduate programs in Industrial Engineering, Energy Engineering, Design Engineering & Production Engineering. Department also offers Ph.D programme in various specializations of the Mechanical Engineering.

## Who Should Attend?

This course is aimed to the faculty of engineering at Degree / Diploma levels, PG students, Research Scholars **only** from AICTE approved technical institutions from all over India, who intend to learn and/or teach Kinematic and Dynamics of Mechanisms and Machines through modern tools and techniques, such as, Motion View and Motion Solve, MATLAB.

## ATAL Academy

AICTE Training and Learning (ATAL) Academy is established with the vision "To empower faculty to achieve goals of Higher Education such as access, equity and quality". ATAL academy will conduct a series of workshops in thrust areas identified by AICTE.

## Important dates

Registration before: 30<sup>th</sup> October, 2019  
Communication of acceptance: 5<sup>th</sup> November, 2019  
Course Dates: 11<sup>th</sup> - 15<sup>th</sup> November, 2019

## How to apply

Step 1: Participants are required to apply by filling ONLINE registration form available at the below URL:

<https://forms.gle/zehCzjbhFGfHHADU9>

Step 2: Thereafter, the participants are required to send through email the scanned copy of the duly filled and signed registration form attached with this brochure.



**Malaviya National Institute of  
Technology Jaipur- 302 017**

**AICTE Training and Learning (ATAL)  
Academies Programme  
on**

**"Design and Analysis of Mechanisms and  
Machines through Motionview and MATLAB"  
(11<sup>th</sup>- 15<sup>th</sup> November 2019)**

**Registration Form**

Full Name: \_\_\_\_\_

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

Qualification: \_\_\_\_\_

Specialization: \_\_\_\_\_

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

Affiliation & Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Whether the Institute is AICTE approved ? **Yes / No**

Category: **UG/PG student/ Research Scholar/ Faculty**

Mobile: \_\_\_\_\_

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

Date: \_\_\_\_\_ Signature of the Applicant

The application is hereby recommended & permitted to attend the above ATAL Programme for the notified duration, if selected.

Signature and Seal of HOD/Head of Organization

**Programme Coordinators:**

**Dr. Dinesh Kumar**  
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**Dr. Amar Patnaik**  
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**Key Points:**

- ✚ There is no Registration fee from a participant from AICTE approved institutes.
- ✚ No TA/DA will be paid to any participant.
- ✚ Participants will have to make their own stay arrangement during the five days.
- ✚ During sessions tea and working lunch will be provided to the participants.
- ✚ On successful completion of the programme on all the days, participants will be awarded a certificate of participation by the respective ATAL Academy.

**Address for Correspondence**

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**MALAVIYA NATIONAL INSTITUTE  
OF TECHNOLOGY JAIPUR**

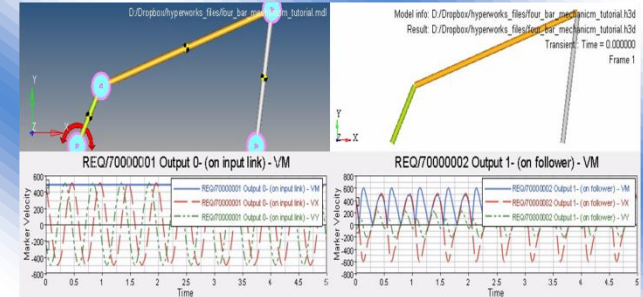
**ANNOUNCES**

**AICTE Training and Learning (ATAL) Academies  
Programme**



*On*

**"Design and Analysis of Mechanisms and  
Machines through Motionview and MATLAB"  
(11<sup>th</sup>- 15<sup>th</sup> November 2019)**



**Organized by  
Mechanical Engineering Department**



**Malaviya National Institute of  
Technology Jaipur- 302 017**  
**<http://www.mnit.ac.in/>**