

## Ansys Syllabus

### Objective


The entire objective of the 60 hrs this program is to develop the basics of the students designing and analysis


### Course outcomes

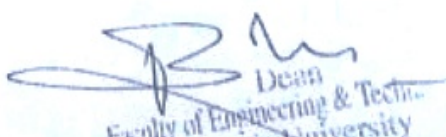
- Carry out the basic end-to-end static structural analysis process in Ansys Mechanical.
- Describe several of the considerations that are important in the planning of a useful and appropriate analysis model.
- Demonstrate a basic understanding of viewing control, entity selection, geometry import, material property definition and assignment, coordinate systems, mesh control, contact regions, simple loads, supports and results display.
- Appreciate the importance of model validation and several common techniques that may be used to achieve it.

### Introduction to FEA and Ansys

- Introduction to FEA
- General working of FEA
- Nodes, element and elements shapes
- General procedure of conducting finite element analysis
- FEA through ansys
- Effective utilization of FEA
- FEA software
- Advantages and limitations of FEA software
- Key assumptions in FEA
- Assumptions related to geometry
- Assumptions related to materials properties
- Assumptions related to boundary conditions
- Assumptions related to fasteners
- Types of analysis
- Structure analysis
- Thermal analysis
- Fluid flow analysis
- Electromagnetic field analysis
- Coupled field analysis
- Important term and definitions

  
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- Strength
- Load
- Stress
- Strain
- Elastic limit
- Ultimate strength
- Factor of safety
- Lateral strain and Poisson's ratio
- Bulk modulus
- Creep
- Engineering materials
- Introduction to Ansys
- System requirement
- Getting started with Ansys
- Interactive mode
- Launcher window
- Command window icon
- Raise hidden icon
- Reset picking
- Contact manager

### **Basic solid modeling**

- Solid modeling in Ansys
- Solid modeling and direct generation
- Solid modeling method
- Bottom up construction
- Consideration before creating a model for analysis
- Details required
- Symmetry
- Creating geometric entities

### **Thermal analysis**

- Important terms used in thermal analysis
- Heat transfer mode
- Thermal gradient
- Thermal flux
- Bulk temperature

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## Department of Mechanical Engineering

20 January 2022

### CIRCULAR

#### VALUE ADDED COURSE (Ansys in Mechanical Engineering)

#### B. Tech. ME


Students of B. Tech. (ME) all years are hereby informed that value added course "Ansys in Mechanical Engineering" is scheduled from 1 February 2022 in your respective classroom, Academic Block-II.


#### Schedule:


- Time Slot: 03:00 PM to 05:00 PM
- Key Speaker : Mrs Ritu Gupta
- Duration: 2 hrs

#### Program Overview:

The objective of the program is to introduce the basic concept of Ansys and its applications, challenges and its importance to enable the students how to approach for solving the engineering problems using Auto cad simulation.

  
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Department of Engineering & Technology  
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Mr. Anuj Kumar  
(HOD)  
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**VALUE ADDED COURSE**  
(Ansys for Mechanical Engineering)

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Program:-B. TECH.



03:00 PM TO 05:00 PM



1 Sept 2021 - 30 Oct 2021

  
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**KEY SPEAKER :**  
Mrs. Ritu Gupta

HOD:

MR. Anuj Kumar  
 Head

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 Dean

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# \*VALUE ADDED COURSE (AutoCAD Mechanical Engineering).



## PROGRAM OVERVIEW:

The objective of this course is to make the students aware and to learn how Ansys software really works. They have got the opportunity to gain and developed their technical skills by the learning of Ansys and its various features and commands.

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