Mussoorie Diversion Road
Dehra Dun - 248 009
Uttarakhand INDIA
Phones +91.135.3000 300,
FAX +91.135.3000 309
Email: dit@dituniversity.e

OFFICE OF THE REGISTRAR
NOTICE

DIT UNIVERSITY
IMAGINE ASPIRE ACHIEVE

Ref:- 681197-CDC/VAT-2021-22/TB

Date: 8th September 2021.

Subject: Schedule for Technical Training – ANSYS (VAT 76)

Attention: Students of B.Tech 5th Semester (Mechanical & Mechanical Automobile Engineering)

The students are hereby informed that the Technical Training – ANSYS will be held from 13th **September 2021 to 30th September 2021** for the students of B.Tech 5th Semester (Mechanical & Mechanical Automobile Engineering).

Note: It is mandatory for all the above-mentioned students to attend the training.

Dr. Vandana Suhag

Registrar

Registrar
DIT University, Dehradun

To:

- All Deans / Directors
- HoDs
- Head CDC

With the request to bring the above to the notice of the students

Copy to:

- Chairman
- Chancellor
- Vice Chancellor
- Pro Vice Chancellor
- ICT Manager – to upload on website

For information please

Registrar
DIT University, Dehradun

DIT UNIVERSITY
IMAGINE ASPIRE ACHIEVE

Technical Training-ANSYS for B.Tech-ME & ME-AE Students

Course:-B.Tech- ME & ME-AE 3rd Year **Venue**:-Chanakya Seminar Hall

Organized By- Department of Mechanical Engineering **Date:-**13th September- 30th Sept. 2021

Duration:-40 Hrs. **Timings:-**3:00 PM to 6:00 PM

Training Objective:

- The primary objective of this Ansys Mechanical Training class is to teach participants Finite Element Analysis in Ansys Mechanical Workbench.
- Thus, upon completion of this course, participants will be able to set up, solve, and diagnose their own Structural Analyses in the Ansys Mechanical Workbench.
- This is a problem-based training where the focus will be on understanding what's under the black box so as to move beyond garbage-in, garbage-out.
- Learner's practice using a common solution approach to problems involving different physics: structural mechanics, fluid dynamics and heat transfer.
- Textbook examples are solved to help understand the fundamental principles of finite-element analysis and computational fluid dynamics.
- Then these principles are applied to simulate real-world examples in the tool including a bolted rocket assembly and a wind turbine rotor.
- By working through examples in a leading simulation tool that professionals use, students learn to move beyond button pushing and start thinking like an expert.
- This training provides learners with the most flexible learning environment possible.
- It can be accessed from multiple devices which makes it easy to learn on the go.
- Trainings are pre-recorded or in slide presentation with voice-over commentary, interactive discussion boxes that foster student to student interaction, Email communication with the instructor are part of this process.

Training Overview:

- Ansys Mechanical is a finite element analysis (FEA) tool that enables you to analyze complex product architectures and solve difficult mechanical problems.

Registrar
DIT University, Dehradun

ANSYS TRAINING

INTRODUCTION

- About ANSYS
- ANSYS Basics
- Mechanics
- Today's Scenario & Future of FEA

----- BASICS OF FEM

- Theoretical FEM Procedure To Solve Above Mechanics Problem
- Generalized Static Equation
- Theoretical Basis: Formulating Elements Equation
- Six Steps In The Finite Element Method
- Fundamentals Of Elasticity
- Theories Of Failure
- Linear Static Analysis
- Non-Linear Static Analysis
- Thermal Analysis
- FEA Design Intent

----- GETTING STARTED WITH ANSYS APDL

- Accessing ANSYS & Understanding GUI
- Utility Menu
- Manipulating Model
- Standard Toolbar
- Command Input Window
- Riser/Hide Icon
- Reset Picking
- Contact Manager
- ANSYS Toolbar
- User Prompt Information & Current Settings
- ANSYS Main Menu

---- CAD MODELING USING ANSYS

- Units
- Co-ordinate System
- WorPlane
- 1D, 2D And 3D Modeling (2D & 3D Space)
- CAD Modeling of Bridge
- 2D Modeling Of Container (2D Space)
- 3D Modeling Of Shaft
- Methods Of Solid Modeling
- Component And Assembly Management

- IMPORTING GEOMETRY FROM OTHER CAD PACKAGES

- Understanding Different Import Features
- Importing IGES File In ANSYS
- Import Using SMOOTH Option
- Import Using FACETED Option
- Geometry Cleanup For Meshing

---- MESHING

- Introduction To Meshing
- Elements Classification
- Element Properties
- Meshing Using ANSYS
- Line Meshing Of Electric Pole (1D)
- Area Meshing Of Pad Clip (2D)
- Volume Meshing Of Vehicle Differential (3D)

---- MESHING (ADVANCE) & TECHNIQUE

- Mesh Generation: Automatic Techniques
- ANSYS Automatic Mesher Technique
- Automatic Map Meshing Of Tank
- Automatic Tri/Tet Mesh With Smart Size Algorithm
- Blased Meshing
- Refine Meshing
- 2D Map Meshing For Reduction Area
- Map Meshing For Reducing Element Transition
- 2D Map Meshing To Handle Solid Circle
- 3D Hexahedron (Brick) Manual Meshing

---- FINALIZING FE MODEL FOR ANALYSIS

- Element Quality Criteria
- Mesh Quality Check Of Support Plane
- Methods Of Creating Quality Mesh
- Creating Quality Elements
- Materials
- Boundary Conditions

---- ADVANCE BOUNDARY CONDITIONS

- Application Of Mass Elements

- Application Of Rigid Elements
- Spring & Pin Joint Simulation
- Linking Solid Faces To Beam And Shell Edges
- Simulating Bolted Joints
- Arc Weld Modeling
- Representing Weld using Shell And rigid Elements
- Torque On Solid Element
- Simulating Leakage
- Symmetry Boundary Conditions
- Mesh Generation

---- GETTING STARTED WITH ANSYS WORKBENCH

- ANSYS Workbench Interface
- Getting Started with ANSYS Workbench
- Project Page and File Management
- Interaction With Different Workbenches
- Toolbar position
- Toolbox Customization
- Reset workspace
- Progress toolbox
- Graphic Interactor

- DESIGN MODELER

- Why Design Modeler?
- Graphical User Interface
- Design Principles
- Parameters in Design Modeler
- Sketching Mode
- Unit
- Constraints
- Concept Modeling
- Extrude ,Revolve, Sweep , Loft
- Advanced modeling features
- Importing
- Work plane
- Primitives

-- SIMULATION BASICS

- Pre-Processing
- Solution
- Post Processing
- Material By library
- Material By User input
- Descritization, Mesh Control, Mesh Study, Mesh Quality.
- Boundary Conditions
- Analysis settings
- Static Structural Analysis
- Linear Buckling
- Rigid Dynamics
- Steady State Thermal Analysis
- Shape Optimization
- Explict Dynamics
- Computational Fluid Dynamics(CFD)
- CFX

----- HANDLING PROJECTS

- The Steps in An FEA Projects
- Integrative And Dead-end FEA

- PROJECTS SKILLS

- What Could Possibly Go Wrong
- How To Be A Smart FEA Shopper
- What FEA Reports And Backups Should Do
- Report Generator

---- PROJECTS

- Analysis Of A Piston
- Analysis Of Bearing

Registrar
DIT University, Dehradun

Annexure - II

Value added course Details (Academic Year: 2021-22)

VAT Course Name: Ansys Training

VAT Code: VAT 76

Duration in Hours: 40

Number of Students Enrolled: 61

Number of Students Completed: 61

Grades:	G= GOOD ; S = Satifactory ; P = Poor ; W = Withdraw			
Student ID	**Student Name**	**Program/Course**	**Year**	**Passing Grade**
180106026	SUMIT SINGH	Bachelor of Technology in Mechanical Engineering	3rd Year	S
180106045	ATHARV TIWARI	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106001	MALYAJ DWIVEDI	Bachelor of Technology in Mechanical Engineering	3rd Year	G
190106002	ISHANN AGARWAL	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106004	NIBHAN HASNAIN	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106005	PRATEEK SHARMA	Bachelor of Technology in Mechanical Engineering	3rd Year	G
190106006	PRATHAM SINGH GANGOLA	Bachelor of Technology in Mechanical Engineering	3rd Year	G
190106007	AAKASHDEEP SINGH	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106008	HAMMAD NAIAR	Bachelor of Technology in Mechanical Engineering	3rd Year	G
190106009	PRAGATI SAJWAN	Bachelor of Technology in Mechanical Engineering	3rd Year	G
190106010	VIBHOR DIMRI	Bachelor of Technology in Mechanical Engineering	3rd Year	G
190106011	KARTHIKEY SINGH	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106012	UTKARSH SINGH	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106014	DIVYANSHU RAWAL	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106015	AYUSH KUMAR SHARMA	Bachelor of Technology in Mechanical Engineering	3rd Year	G
190106016	DEEVANSH PRATAP SINGH	Bachelor of Technology in Mechanical Engineering	3rd Year	G
190106018	PRAKHAR GUPTA	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106019	SHASHWAT PRATAP SINGH	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106021	GAUTAM DARIYAL	Bachelor of Technology in Mechanical Engineering	3rd Year	G
190106022	PARTH SINGH	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106023	MAYANK RAWAT	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106025	ADITYA KUMAR MISHRA	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106027	LOMNESH PAL	Bachelor of Technology in Mechanical Engineering	3rd Year	G
190106028	PRABAL KANOJIA	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106029	ASHISH ARIDA	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106030	UPENDRA SINGH SOLANKI	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106031	MAYANK KUMAR	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106032	VAIBHAV JOSHI	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106042	ROHIT SINGH BISHT	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106043	MANU SHARMA	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106044	THAKUR PRASAD K.C	Bachelor of Technology in Mechanical Engineering	3rd Year	G
190106045	SHARAD PANDEY	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190106046	AKSAJ SHARMA	Bachelor of Technology in Mechanical Engineering	3rd Year	S
200106900	VIDHAN NAITHANI	Bachelor of Technology in Mechanical Engineering	3rd Year	S
200106901	NITIN DARMORA	Bachelor of Technology in Mechanical Engineering	3rd Year	G
200106904	KUMAR GAURAV	Bachelor of Technology in Mechanical Engineering	3rd Year	S
200106905	BASHAR ALI	Bachelor of Technology in Mechanical Engineering	3rd Year	S
200106906	FARMAAN KHAN	Bachelor of Technology in Mechanical Engineering	3rd Year	S
200106907	TEJASVI KUMAR	Bachelor of Technology in Mechanical Engineering	3rd Year	S
200106908	HARSH JOSHI	Bachelor of Technology in Mechanical Engineering	3rd Year	S
200106909	KUNAL BHARGAVA	Bachelor of Technology in Mechanical Engineering	3rd Year	S
200106910	ARIJIT KAR	Bachelor of Technology in Mechanical Engineering	3rd Year	S
200106911	AKARSH TYAGI	Bachelor of Technology in Mechanical Engineering	3rd Year	S
200106930	GARIMA SINGH	Bachelor of Technology in Mechanical Engineering	3rd Year	S
200106931	PIYUSH VERMA	Bachelor of Technology in Mechanical Engineering	3rd Year	S
190113001	VAIBHAV CHOUDHARY	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	S
190113002	YUVRAJ BISHT	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	G
190113003	HARSH UPADHYAY	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	G

Registrar
DIT University, Dehradun

190113004	ABHAY ARORA	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	S
190113005	VIVEK SINGH	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	S
190113006	ANKIT KHADKA MAGAR	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	S
190113007	ISHANT CHAUHAN	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	S
190113008	ANIKET NEGI	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	G
190113009	HARSH CHAUHAN	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	G
190113010	KARAN BISHT	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	S
190113011	VISHAL TAMTA	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	S
190113012	DEEPAK SINGH	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	S
190113013	DEEPAK JOSHI	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	S
200113900	WAQUAR AHMAD	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	G
200113901	ZUHER AHMAD	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	G
200113902	MOHD RAHID	Bachelor of Technology in Mechanical Engineering with Spl. In Automobile	3rd Year	S

Submitted
Head CDC
Career Development Cell
DIT University, Dehradun

Registrar
DIT University, Dehradun