Mahatma Gandhi Mission's
College of Engineering & Technology, Noida.
Department of Mechanical Engineering

Practical Summer Training Schedule

a) Minor Fabrication Work at Institute

As per the Evaluation scheme the students can do Minor Fabrication Work at institute as a part of Practical Summer Training after IV Semester.

Duration: i) First Week: from 5 June-2018 To 11-June-2018

ii) Second Week: from 10 July-2018 To 17 July-2018

6 Groups (4 students in each Group) have been allotted supervisors to monitor the Minor Fabrication work. (List attached)

b) Practical Summer Training

Summer Practical Training facility will be provided in College premises during summer vacation (11th June, 2018 to 6th July, 2018)

Practical exposure in the following areas will be given during Training.

Sr	Week	Training on	Particulars	Duration	Faculty members
1	First	Ansys	College is having Licensed Softwares	11 June-18 To 13June-18	Mr Umesh Yadav
2	Second	CNC Lathe & Milling Operations	Cut viewer software used for CNC operations	14 June-18 To 22 June-18	Mr Abhijit Kulkarni & All Faculty members
3	Third	Pro E	College is having Licensed Softwares	25 June-18 To 29 June-18	Ms Mohani, Mr Ravindra Ram
4	Fourth	Minitab/ SPSS	Statistical analysis softwares used for the Six Sigma applications.	02 July-18 To 6 July-18	Mr Sachin Jambhale, Mr Ram Prakash

Note: Training will provided free of cost for students enrolled for training.

Industrial Training Coordinator **HOD**

MGM's College of Engineering and Technology

Department of Mechanical Engineering

Groups for Minor Fabrication work (STME)

Group No	Students Name	Guide	Title
1	ABHIJIT SINGH	Mr Umesh Yadav	Automated Stand Retrival for two wheelers
	KIRSHANT TOMER		
	SACHIN		
	SAKET SHARMA		
2	SHUBHAM JAISWAL	Mr Ravindra Ram	Fabrication of Go cart
	MANISH KUMAR SHAH		
	ABHISHEK KUMAR		
	AMAN SHARMA		
3	MOHIT GHILDIYAL	Mr A A Kulkarni	Table Saw
	ABHISHEK PANDEY		
	HARSHIT GANOTRA		
	ARYAN SINGH		
4	RAHUL KUSHWAHA	Mr Ram Prakash	Fabrication of Experimental setup for finding the equivalent stiffness
	ABDUL AHAD		
	MOHD.NADEEM		
	MOHD.SHAHRUKH		
5	LOKESH KUMAR	Prof A K Sinha	Fabrication of Conveyer Belt using Genova Mechanism.
	JITENDRA SINGH		
	MOHIT		
	RANJAN TIWARI		
6	AKASH SHARMA	Ms Mohani	Adjustable Table with Lifting Mechanism
	ASHUTOSH SENGAR		
	JITENDRA SINGH		
	MOHIT CHAUDHRY		

Course Name: ANSYS Workbench **Duration: 15 hrs.**

Syllabus:

Module-1 Introduction

Introduction to CAE , General working of FEA , Stiffness matrix , Boundary conditions
Elements and Element Shapes , General procedure to conduct FEA software , Key Assumptions in FEA , ANSYS Workbench 17.0 GUI

Module-2 Design Modeler

Introduction to DesignModeler, Planes and Sketches, Modeling, Geometry Simplification and Repair, CAD Connections, Parameterization, Solid Modeling , Sketching, Pattern, Assembly, Beams and Shells , Lines and Surfaces

Module-3 Material Properties

Material Definition, Explaining about nodes & elements, Creating and Adding Materials, Assigning Material to the Beam, Assigning Material to the Clamp, Assigning Material to the Assembly

Module-4 Meshing

Introduction, Global Meshing Controls , Local Meshing Controls , Meshing of Plate with Holes, Generating the mesh and generating the local mesh Assembly Meshing, Mapped meshing. Define loading & boundary conditions.

Module-5 Static Structural Analysis

Introduction to Static Structural Analysis , Loads , Supports, Nodal Loads and Supports

Module-6 Results and Post processing

Viewing Results Scoping Results Solutions Combinations Stress Singularities

Module-7 Vibrational Analysis

Basics of Free Vibration Geometry model Solution Modal Results

Module-8 Thermal Analysis

Basics of heat generation thermal conductivity Modal Results

Module-9 Practice Session

CNC Programming for Milling/Turning

Module 1

Introduction of Computer Numerical Control (CNC) Features of CNC, Elements of CNC machines, the machine control unit for CNC, Tooling for CNC Machines

Module 2

System Devices: Drives, Feedback devices, Counting devices, Control loop circuit elements in PTP system, contouring system, Incremental and absolute systems.

Module 3

Introduction of CNC Lathe & CNC Milling,

Introduction of cut viewer software

Part programming-Introduction, G codes & M codes

Axis designation, Program format, Method of writing a program

Module 4

Part programming for point to point machining

Part programming for machining along straight line

Part programming for machining along curved surfaces

Practice of writing a simple part programs

Module 5

Practice of Manual (word address format) programming Examples Drilling, Turning and Milling,

Hands on practice on CNC Milling & Turning during training

Pro-E COURSE CONTENT

Module 1: INTRODUCTION

Introduction to Pro Engineer
User Interface Overview
File operations, Sketch Mode
Drawing, Dimensioning a Sketch
Working with Constraints
Modifying Dimensions and Deleting
Trimming, Mirroring.

Module 2: SKETCH MODULE

Sketch Operations Fillets
Splines
Text in Sketches, Importing Sketches
Scaling and Rotating.

Module 3: SOLID MODULE

Solid Modeling I Extrude, Revolve
Default Datum Planes.

Module 4: Datum Planes and Axes, Datum Points .

Module 5: MODELLING

Solid Modeling , material removal , Rounds, Chamfers , Editing Features.

SPSS MODULE CONTENTS

Module 1

Introduction of SPSS, Application of SPSS, Data entry, statistical analysis for mean, average deviations etc.

Module 2

Reliability Testing of data by Cronbach coefficient (α), hypothesis formulation, hypothesis testing (Null hypothesis accepted/ rejected).

Module 3

Correlation analysis for qualitative data

Module 4

Parametric and non-parametric analysis, T- test , dependent and independent variables

Module 5

Case analysis for data

Design of Experiments using Minitab

Design of Experiments is a statistical methodology to test several theories or examine the effect of several factors in developing a new product/ process and solving chronic industrial problem. The methodology has found wide application in various industries like chemical, pharmaceutical, engineering and many other industries. This program is designed to develop the skill set required for problem solving and process performance optimization through designing, executing and analyzing industrial experiments. Minitab 17, a statistical software package, will be used in the training to layout the experiment and analyze the data to strive for an optimal solution.

Course objectives

By the end of Minitab training you will be able to:

• To understand the industry application of DOE approaches in optimizing solutions.

• To introduce the basic concepts of DOE: factor, response, level, randomization, replication, blocking

• To understand the applications of full and fractional factorial design in industry.

• To learn and practice data analysis using MINITAB 17

• To learn how to design, run, analyse, interpret and present the results from full and fractional factorial design using MINITAB 17.

• To understand the use of Orthogonal Arrays (Taguchi Methods) to design and run experiments

• To determine main effect and interaction effect of factors on response.

Course content:

• Introduction to Design of Experiment (DOE)

• Basics of Statistics for DOE: Creating and using confidence intervals, Power & Sample Size, t- test, one way & two way analysis of variance
(Anova), variance test to show evidence of a process change or improvement

• Overview of MINITAB 17: file structure, tool bars, basic graph summaries, descriptive statistics

• Classical Design and analysis of Experiments: Full Factorial and Fractional Factorial design

• Using MINITAB to create and analyze Full and Fractional Factorial design.

• Taguchi methods: Design experiments using Orthogonal Arrays(OA) & Signal to Noise Ratio analysis

• Using Orthogonal Arrays to design and run experiments.

• Interpret tabular and graphical results.

• Determine main effect and interaction effect.

• Choice of design based on cost and benefits.