



LAB PROJECT GUIDANCE OF

B. TECH.

MECHANICAL ENGINEERING

GYAN VIHAR SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

EDITION 2016

SURESH GYAN VIHAR UNIVERSITY, JAGATPURA JAIPUR.

Department Of Mechanical Engineering B.Tech Syllabus 3th Sem Session 2015-2019 (Onwards)

To be implemented in session 2016-17

Lab code	LabName	Project No	Remarks
ME 251	Mechanics of Solid Lab	25	
ME 253	Industry Oriented Thermal Engineering Laboratory	25	
ME 255	Casting , Welding & Forming Lab	25	
ME 257	Material Science Lab	25	

ME 251	MECHANICS OF SOLIDS LAB
SNO	PROJECT NAME
1.	Experimental Study of 2D Stress Fields
2.	A Coarse Approximation to 2D Stress Field
3.	Fracture Studies of a "Composite Material"
4.	Cranck shaft mechanism
5.	Slider Mechanism
6.	Singular pendulam
7.	Working model of crusher mechanism of triple plane
8.	Working model of cane crusher machine
9.	Dynamic motion of automile parts working model
10.	Fracture Studies of a "Composite Material"
11.	Working model of automobile parts calculate the CG.
12.	Working model of an object Load calcution of an machining parts
13.	Working model of lifting machine
14.	Double slider mechanism
15.	Rack and pinion
16.	Worm and worm wheel
17.	Wheel assembled object
18.	Structure of beam to calculate and balnce CG
19.	Working model of Izod Impact testing object
20.	Working model of Rockwell Hardness Testing object
21.	Demo model Spring Tesion

22.	Demo Model of Column Testing for buckling object
23.	Working model of Bending Machine
24.	Demo Model of Fatigue Testing Machine
25.	Demo model of pulley Mechanism

ME 253	Industry Oriented Thermal Engineering Laboratory
Sno.	Project Name
1.	Solar Refrigeration System
2.	Analysis of AGR Emission Reduction
3.	Mini Bio Gas Fuel Turbine
4.	Bio Gas Powered Vehicle
5.	Candle Light Powered Fan
6.	Design of Heat Exchanger for a Steel Plant
7.	Working Model of Heat Pipe
8.	Compact thermal management system
9.	Hydro turbo machines
10.	Working model of turbine transfers energy from a fluid to a rotor
11.	Working model of compressor transfers energy from a rotor to a fluid
12.	Demo model of Hydro Power Projects
13.	Water Turbine Power generation system
14.	Solar Powered Refrigerator
15.	Solar Powered Air Conditioner
16.	Compressed Air Cars
17.	Mini Scooter
18.	Working model of Battery Thermal Management System Design Modelling system
19.	Working Model of Dynamic Thermal Management for Distributed Systems

20.	Working model of Nonlinear Controller for Automotive Thermal Management Systems
21.	Working model of Transformer heat reduction system
22.	Working model of Fabrication of furnace using infrared Lamp
23.	Working model of Water cooler cum Water heater by using refrigeration System
24.	Remote controlled boiler flame adjustment system
25.	Fabrication of Automatic temperature controller with cooling system

ME 255	Casting , Welding & Forming Lab
SNo	Project Name
1.	Wooden Air engine
2.	Fabrication of shot blasting machine for cleaning Cast iron component
3.	Fabrication of power press 30. Fabrication of stem power generation
4.	Renewable energy by solar tracking system
5.	Fabrication of peddling water pump in bi-cycle
6.	Fabrication of rotary milling fixture
7.	Fabrication of coolant filtration system for CNC Lathe
8.	Fabrication of spring end grinding machine
9.	Fabrication of pneumatic grinding machine
10.	Fabrication of hydraulic grease gun
11.	Fabrication of air cooler cum air heater
12.	Fabrication of keyway attachment for lathe
13.	Fabrication of shot blasting machine for cleaning Cast iron component
14.	Fabrication of lathe coolant pump with fitting Arrangement
15.	Fabrication of welding slag cleaning machine
16.	Fabrication of Maize de-Husker
17.	Fabrication of Solar seed Dryer with Auto Tracking
18.	45.Fabrication of Tomato grader
19.	.Fabrication of Hydraulic

20.	axis Modern Trailer
21.	Fabrication of vegetable slicing
22.	Fabrication of Agricultural Motor Pump Running using Solar Power
23.	Fabrication of Solar Agro Sprayer
24.	Fabrication of Seeds Sprayer
25.	Fabrication of rotary Kaller

ME 257	Material Science Lab
SNo	Project Name
1.	Model of Atomic structures
2.	Model of Atomic structures in HCP
3.	Model of Atomic structures in BCC
4.	Model of Atomic structures in FCC
5.	Demo Model of Iron Carbon Diagram
6.	Phase and mixture difference object
7.	Crack propagation
8.	Selection of Materials for Aircraft
9.	Selection of Materials for Gears
10.	Selection of Materials for cutting tools
11.	Selection of Materials for piston
12.	Selection of Materials for Tyres
13.	Selection of Materials for connecting Rod
14.	Selection of Materials for Thermal Insulators
15.	Selection of Materials for Electrical Insulator
16.	Selection of Materials for Engine body
17.	Demo Model for TTT diagram
18.	Normalizing
19.	Selection of Materials for Hardening
20.	Selection of Materials for Tempering
21.	Selection of Materials for Wear Resistance steels
22.	Selection of Materials for Bearing
23.	Coupling agents and fillers

24.	Selection of Materials for Composites
25.	Selection of Materials for RCC

SURESH GYAN VIHAR UNIVERSITY, JAGATPURA JAIPUR.

Department Of Mechanical Engineering B.Tech Syllabus 4th Sem Session 2015-2019 (Onwards)
To be implemented in session 2016-17

Lab code	LabName	Project No	Remarks
ME 252	Fluid Mechanics Lab	25	
ME 254	Machine Element Design Lab	25	
ME 258	Industry Oriented Internal Combustion Engine Lab	25	
ME 256	Kinematics and Dynamics Lab	25	

ME 254	Fluid Mechanics Lab
SNo	Project Name
1.	Fabrication of Pneumatic 4-axis JCB Equipment
2.	Automatic sensor based wall painting robot
3.	PLC based automatic multi-machine lubrication system
4.	Fabrication of queries controlling system for two wheeler
5.	Automatic Pneumatic Paper cup folding Machine
6.	Automatic paint spraying Equipment
7.	Automatic pneumatic vice and jack
8.	Fabrication of hydraulic operated adaptive breaking system
9.	Fabrication of Pneumatic operated ladle tilting mechanism for foundries
10.	Automatic bar feeding mechanism for hack saw machine
11.	Fabrication of hydraulic revolving multi-purpose trailer
12.	Fabrication of Double axis pneumatic JCB Equipment
13.	Automatic Electro-Hydraulic Braking System for Four Wheeler
14.	Fabrication Automatic differential unit locking System
15.	Compressed air production using vehicle suspensor
16.	Fabrication of Pneumatic Operated Automatic packing Control Machine
17.	Fabrication of Hydraulic Pallet Truck
18.	Fabrication of Automatic Pneumatic Chapathi making machine
19.	Fabrication of Pneumatic Auto gear changer
20.	Fabrication of automatic pneumatic reciprocating grinding machine
21.	Auto Indexing gear cutting attachment for pneumatic shaping Machine

22.	Electronic Assisted hydraulic breaking system
23.	Automatic Distance Measurement and Braking System By using Ultrasonic Waves
24.	Fabrication of Pneumatic Auto feed Bottle washing Machine
25.	Fabrication of Pneumatic Reciprocating Water Pumping System

ME 252	Machine Element Design Lab
SNo	Project Name
1.	Fabrication Of Hydraulic Pipe Clamp Pressing
2.	Machine Design and Fabrication of Pneumatic reciprocating Water Pumping system
3.	AUTOMATIC PNEUMATIC PAPER CUTTING MACHINE
4.	Design and Fabrication Of Agricultural Cutter Using
5.	Four Bar Mechanism
6.	FABRICATION HIGH PRESSURE PNEUMATIC MACHINE VICE
7.	Design and fabrication of pipe inspection robot
8.	Front Wheel Steering System with Movable Headlights
9.	CROP HARVESTER IN AGRICULTURAL
10.	DESIGN AND FABRICATION OF WORKING MODEL OF ABRASIVE JET MACHINE
11.	EFFICIENCY INCREASING SYSTEM IN AUTOMOBILE
12.	AUTO INDEXING GEAR CUTTING ATTACHMENT FOR PNEUMATIC SHAPING MACHINE
13.	PNEUMATIC SOLENOID OPERATED GRINDING MACHINE
14.	Pneumatic Cup Making Machine
15.	HYDRAULIC PIPE BENDING MACHINE
16.	COLD CHAMBER DIE CASTING MACHINE
17.	CNC PNEUMATIC AUTOFEED PUNCHING MACHINE
18.	Swing Electricity Generation System
19.	Spring Testing Machine
20.	Working Model of Levers
21.	Design and Fabrication of a Kinematic Walker
22.	Fabrication Of Pedal Powered Dual Chain Hacksaw Machine
23.	FABRICATION OF HIGHSPEED RECIPROCATING HACKSAW MACHINE
24.	Design And Fabrication Of Hydraulic Arm
25.	FABRICATION OF VERTICAL AXIS WIND TURBINE

ME 258	Industry Oriented Internal Combustion Engine Lab
SNo	Project Name
1.	APPLICATION OF L P G FOR MOPEDS
2.	IGNITION CONTROL TO IMPROVE THE COMBUSTION EFFICIENCY OF I.C ENGINE
3.	DESIGN AND FABRICATION OF VALVE LAPPING MACHINE
4.	PERFORMANCE OF 50CC MOPED (TVS-CHAMP) BY USING DIFFERENT CARBURETTORS
5.	TO STUDY THE PERFORMANCE OF TWO STROKE ENGINE WITH MODIFIED INTAKE SYSTEM
6.	MICROPROCESSOR BASED SPEED CONTROL OF DC SHUNT MOTOR
7.	LUBRICATION OF LPG SYSTEM FOR MOPEDS
8.	SOLAR WATER DISTELLER FOR RAURAL AREAS
9.	BATTERY OPERATED MAGNETIC FORCE ASSISTED MECHANICAL BRAKING SYSTEM
10.	POLLUTION CONTROL THROUGH A SI ENGINE
11.	EXPERIMENTAL SET UP TO STUDY THE GYROSCOPIC COUPLE DUE TO PRECESSIONAL MOTION
12.	MODIFICATION OF CARBURETTOR
13.	L.P.G AS AN ALTERNATE FUEL
14.	SELECTIVE EXHAUST GAS RECIRCULATION IN 2-STROKE S.I ENGINE
15.	STARTER MOTOR TEST RIG
16.	ELECTRO PNEUMATIC CLUTCH CONTROLLING MECHANISM
17.	HINGED JACK
18.	CATALYTIC CONVETER FOR TWO WHEELERS A CASE STUDY
19.	DESIGN AND FABRICATION OF FOUR SEATER CAR
20.	REDISINING AND TESTING OF CADI 50CC 4STROKE MOPED
21.	VEHICAL AERODYNAMICS AND ITS PERFORMANCE CHARACTERSTICS
22.	ENVIRONMENT FRIENDLY TWO STROKE ENGINE
23.	SPEED CONTROL OF RADIATOR FAN USING DIFFERENTIAL GEAR ARRANGEMENT
24.	EXTERNALLY CHARGED BATTERY ASSISTED TRICYCLE FOR LEGLESS
25.	AUTOMOTIVE EMISSION CONTROL

ME 256	Kinematics and Dynamics Lab
SNo	Project Name
1.	Automatics stamping machine
2.	Stitching machine
3.	Automatic potato chips making machine
4.	Fabrication of Miniature Boiler
5.	Fabrication of Cylindrical grinding Machine
6.	Fabrication of Hydro Coupling Mechanism
7.	Fabrication of Fiber Extracting Machine
8.	Fabrication of Hybrid System for home
9.	Fabrication of Revolving gate compressor
10.	Fabrication of Delta fan for Industrial Application
11.	Fabrication of Mini milling machine
12.	Fabrication of Magnetic coolant filter
13.	D & F of Multi-Engine Air Compressor
14.	Fabrication of Steam Power Plant
15.	Fabrication of Sub-Marian (Model)
16.	Design and Fabrication of Cam Vice
17.	Fabrication of Multi Nut Tightner
18.	D & F of Micro Boring Attachment
19.	D & F of Circular Cutting machine
20.	D & F of Screw Slotting Machine
21.	Fabrication of Copper Wire Cutting machine
22.	Fabrication of Rubber Melting Machine
23.	Fabrication of Mini Water Service Station
24.	Fabrication of Multi Drill Holder
25.	Fabrication of Special Purpose Tapping Machine

SURESH GYAN VIHAR UNIVERSITY, JAGATPURA JAIPUR.

Department Of Mechanical Engineering B.Tech Syllabus 5th Sem Session 2015-2019 (Onwards)

To be implemented in session 2017-18

Lab code	LabName	Project No	Remarks
ME 351	Dynamics of Machine Lab	25	
ME 355	Industry Oriented Production Process Lab	25	
ME 357	Mechanical Vibration & Noise Vibration Lab	25	

ME 351	Dynamics of Machine Lab
SNo	Project Name
1.	Fabrication of Copper Wire Cutting machine
2.	Fabrication of Rubber Melting Machine
3.	Fabrication of Multi Drill Holder
4.	Fabrication of Special Purpose Tapping Machine
5.	Fabrication of Hydraulic Vice with Power Pack
6.	Fabrication of High Speed Portable Pipe Cutting Machine
7.	Fabrication of Dosai Maker
8.	Fabrication of U-Type, V-Type, L-type Angle Bending Machine
9.	Fabrication of Lawn Mover
10.	Fabrication of Sheet Straightening Machine
11.	Fabrication of Wood Turning Lathe Machine
12.	D & F of Hot and Cold Water Dispenser
13.	Fabrication of Magnetic Iron Separator
14.	Fabrication of Radial Plunger Pump
15.	Fabrication Folding Mobile with Gas and petrol
16.	Fabrication of Vacuum Pump
17.	Fabrication of Electronic Braking System
18.	Operated Automatic Ramming Machine
19.	Fabrication of Pedestal Spot Welding Machine
20.	Fabrication of Pneumatic Multipurpose Grinder
21.	Motorized Wheel Chair for Physically Disabled
22.	Fabrication of Sensor
23.	Hydraulic Puller for Automobile Engines
24.	Fabrication of self feed Drilling Machine
25.	Fabrication of spring separator

ME 355	Industry Oriented Production Process Lab
SNo	Project Name
1.	Fabrication Of Tube Bending Machine
2.	Fabrication Of Pneumatic Mobile Crane
3.	Design and Fabrication Of Tension less Bike
4.	Design and Fabrication Of Hammer
5.	Fabrication Of Miniature (Mini) Boiler
6.	Design and Fabrication Of Small Scale Sugarcane Harvesting Machine
7.	DESIGN AND FABRICATION OF PNEUMATIC BEARING PULLER
8.	FABRICATION OF SENSOR OPERATED PNEUMATIC AUTOMATIC PUNCHING MACHINE
9.	FABRICATION OF MULTI NUT TIGHTER OR REMOVER
10.	FABRICATION OF QUICK LIFTING JACK WITH GEAR ARRANGEMENT
11.	DESIGN AND FABRICATION OF SUNFLOWER THRESHER
12.	FABRICATION OF CHAINLESS BICYCLE (SHAFT DRIVEN BICYCLE)
13.	FABRICATION OF VARIABLE VOLUME ENGINE
14.	FABRICATION OF UNCONVENTIONAL COMPRESSOR FOR HEAVY TRUCK
15.	Fabrication Of Pelton Wheel Turbine
16.	Fabrication of Automatic Drilling and Reaming Attachment Control
17.	Air Compressor Using Crank and Slotted Link Mechanism
18.	Compressed Air And Air Drill Operated Bicycle
19.	FABRICATION OF VARIABLE VOLUME ENGINE
20.	Kinetic Energy Recovery System in Bicycle (KERS Bicycle)
21.	Automatic Pneumatic Bumper For Two Wheeler
22.	FUEL INJECTOR TESTING EQUIPMENT
23.	AUTOMATIC GEAR CHANGER IN TWO AND FOUR WHEELER VEHICL
24.	AUTOMATIC ELECTRO-MAGNETIC GEAR SHIFTING SYSTEM
25.	TYRE INFLATION and DEFLATION SYSTEM FOR FOUR WHEELER

ME 357	Mechanical Vibration & Noise Vibration Lab
SNo	Project Name
1.	Heavily Loaded Vehicle Tires: Analysis and Characterization
2.	mechanical shaker
3.	Working model of natural and damping frequencies
4.	Vibration Analysis & balancing of Industrial Rotor
5.	Working model of Frequency dependent human response to sound
6.	Working Model of ,Sound pressure dependent human response
7.	Demo Model of Decibel scale calculator
8.	Working Model of calculate sound power, sound intensity and sound pressure level
9.	Sound spectra
10.	Demo model of Octave band analysis. Loudness. Noise
11.	Acoustic barriers
12.	Noise control at the receiver
13.	Pass-by Noise Reduction in Motorcycles by designing a Hybrid Muffler
14.	Shock Absorber Design for Rickshaw
15.	Smart Pump
16.	Mode Shapes of Cantilever beam
17.	Mode Shapes of Aeroplane Model
18.	Modal analysis of a L-Shaped Structure
19.	Vibration Analysis of Multistorey Building
20.	Model Frequencies of Steering Wheel
21.	Electro Dynamic Shaker System
22.	Electro Mechanical Shaker system
23.	Frictionless Electromagnetic Braking System
24.	Rollator's Parking Brake System
25.	Vacuum Braking System

SURESH GYAN VIHAR UNIVERSITY, JAGATPURA JAIPUR.
Department Of Mechanical Engineering B.Tech Syllabus 6th Sem Session 2015-2019 (Onwards)
To be implemented in session 2017-18

Lab code	LabName	Project No	Remarks
ME 352	Project Oriented Heat & Mass Transfer Lab	25	
ME 354	Automobile lab	25	
** ***	Industrial Engineering Lab	25	

ME 352	Project Oriented Heat & Mass Transfer Lab
SNo	Project Name
1.	Transformer heat reduction system
2.	Fabrication of furnace using infrared Lamp
3.	Water cooler cum Water heater by using refrigeration System
4.	Remote controlled boiler flame adjustment system
5.	Fabrication of Automatic temperature controller with cooling system
6.	Fabrication of Hot and Cold Water Dispenser
7.	Fabrication of Solar air conditioning Machine
8.	Waste chill recovery heat exchanger
9.	Fabrication of Solar Air Conditioner
10.	Fabrication of Mist Coolant system
11.	Automatic Electro-plating coating process
12.	Fabrication of Solar Water Heater by using parabolic collector
13.	Electrical Power Generation using Thermal Power Plant
14.	Fabrication of Bottle Cooler
15.	Fabrication of Solar Fridge
16.	Fabrication of Solar Fridge
17.	Fabrication of Solar Kettle (or) Solar Parabolic Collector
18.	Fabrication of Activated Carbon Manufacturing Plant
19.	Fabrication of Mini Water Heater
20.	Automatic pneumatic vulcanizing Machine using heat sensor
21.	Solar Water Purification by using thermal method
22.	Fabrication of Paper cup folding Machine
23.	Fabrication of Ground Dryer
24.	Fabrication of Lube oil cooler
25.	Fabrication of L.L.D.P. Material extruder

ME 354	Automobile lab
SNo	Project Name
1.	SOLAR WATER DISTELLER FOR RAURAL AREAS
2.	BATTERY OPERATED MAGNETIC FORCE ASSISTED MECHANICAL BRAKING SYSTEM
3.	POLLUTION CONTROL THROUGH A SI ENGINE
4.	COMPARATIVE STUDIES OF SOLAR STILL
5.	EXTERNALLY CHARGED BATTERY ASSISTED TRICYCLE FOR LEGLESS
6.	BIOGAS PURIFICATION FOR C I ENGINE OPERATION
7.	SPEED CONTROL OF RADIATOR FAN USING DIFFERENTIAL GEAR ARRANGEMENT
8.	EXPERIMENTAL SET UP TO STUDY THE GYROSCOPIC COUPLE DUE TO PRECESSIONAL MOTION
9.	STARTER MOTOR TEST RIG
10.	MODIFICATION OF CARBURETTOR
11.	L.P.G AS AN ALTERNATE FUEL
12.	SELECTIVE EXHAUST GAS RECIRCULATION IN 2-STROKE S.I ENGINE
13.	ELECTRO PNEUMATIC CLUTCH CONTROLLING MECHANISM
14.	CATALYTIC CONVETER FOR TWO WHEELERS
15.	MULIUTILITY PNEUMATIC KIT FOR L.M.V S
16.	MICROPROCESSOR BASED PRE PROGRAMMING CONTROLLED VEHICLE
17.	PARAMETRIC STUDY TO REDUCE NOISE FRO DIESEL ENGINE
18.	AUTOMATIC HEAD LIGHT CONTROL FOR 4 WHEELERS
19.	AUTOMATED GEAR SHIFTING MECHANISM
20.	VALVE LAPPING MACHINE
21.	ENVIRONMENT FRIENDLY TWO STROKE ENGINE
22.	REDISINING AND TESTING OF CADI 50CC 4STROKE MOPED
23.	DESIGN AND FABRICATION OF FOUR SEATER CAR
24.	DESIGN AND FABRICATION OF THREE WHEELER FOR PHYSICALLY HANDICAPPED
25.	SELECTION EXHAUST GAS RECIRCULATION IN 2-STROKE S.I ENGINE

****	Industrial Engineering Lab
SNo	Project Name
1.	MATERIAL HANDLING SYSTEMS ANALYSIS AND DESIGN
2.	DESIGN AND INSTALLATION OF AN EXPERIMENTAL SOLAR POND
3.	STUDY ON UNCERTANTY OF MEASURMENT IN METROLOGY LABARATORY
4.	APPLICATIONS AND TECHNO-ECONONICS OF NUMERICALLY CONTROLLED MACHINE
5.	PRODUCTIVITY INCREASE BY OPTIMUM UTILISATION OF MACHINERY, MANPOWER AND ENERGY IN A PAPERBOARD INDUSTRY
6.	OPTIMIZATION OF MATERIALS UTILISATION
7.	EFFICIENT ALLOCATION OF BUSES TO DEPOTS USING MATHEMATICAL PROGRAMING FOR BANGALORE TRANSPORT SERVICE
8.	VALUE ENGINEERING ON MONOBLOC CENTRIFUGAL PUMPS AT BEST AND CROMPTON ENGINEERING LIMITED
9.	INTER FEROMETRY
10.	A COMPUTERISED AND PRACTICAL ALGORITHM FOR LARGE SCALE VEHICAL ROUTING ITI - A CASE STUDY
11.	COMPUTER AIDED DESIGN NESTING OF SHEET METAL SURVEY OF INDUSTRIES
12.	A SURVEY ON QUALITY PROBLEMS IN SMALL SCALE INDUSTRIES
13.	LIBRARY PACKAGE
14.	INVENTORY CONTROL SOFTWARE
15.	OMPARATIVE STUDIES OF KANDASRI SUGAR MILL WITH LARGE SCALE SUGAR MILL AND ITS FEASABILITY
16.	COMPUTER AIDED DESIGN OF SCREW JACK
17.	JUST IN TIME MANUFACTURE
18.	DEVELOPMENT MATHEMATICAL MODEL FOR GRINDING WHEEL WEAR OF A FLOUR MILL
19.	CORRUGATED SHEET ROLLING MACHINE
20.	COMPUTER AIDED LAYOUT OF CONTROL PANEL FOR THE HYDRAULIC POWER PACK
21.	DESIGN AND FABRICATION OF SPIRAL BINDING MACHINE
22.	STRACH EXTRACTION FROM POTATO " POTATO PULPER" FOOT OPERATED SAND SIEVING MACHINE
23.	PRODUCTIVITY IMPROVEMENT IN SMALL SCALE INDUSTRIES
24.	FINANCIAL INFORMATION SYSTEM FOR COLLEGE OFFICE AUTOMATION
25.	COMPUTER AIDED PROCESS PLANNING FOR MILLING JOBS

SURESH GYAN VIHAR UNIVERSITY, JAGATPURA JAIPUR.

**Department Of Mechanical Engineering B.Tech Syllabus 7th Sem Session 2015-2019 (Onwards)
To be implemented in session 2017-18**

Lab code	LabName	Project No	Remarks
** ***	Finite Element Method	25	
ME 451	R.A.C Lab	25	
** ***	MATLAB/ANSYS-II	25	

** **	Finite Element Methods Lab
SNo	Project Name
1.	Study CV-AT004 wheel behavior
2.	Optimization of composite air-craft structures using FEM
3.	Analysis of crack propagation (LEFM & EPFM)
4.	Finite element analysis of Design & Fabrication of solar powered car
5.	Finite Element Analysis of a thin composite laminate plate
6.	Finite Element Analysis of Design And Fabrication Of Rock Climbing Robot
7.	Finite Element Analysis Design, Simulation and fabrication of power section of positive displacement motor
8.	Modeling & Simulation of Full Body Maneuvers (Motion) of a human body
9.	Modeling & Simulation of ABS system
10.	Design, Simulation & Fabrication of space frame (chassis) and power train of a smart car
11.	Design, Simulation & Fabrication of steering, suspension and brake system of a smart car
12.	Parametric study of suspension system of a low mass high performance vehicle by using FEM
13.	Study of dynamic characteristics of a hydraulically actuated system by using FEM
14.	Simulation & Modeling of a tracked vehicle
15.	Design & simulation of a natural gas heat exchanger
16.	Design, Simulation & Development of Heat Exchanger for Waste Heat Recovery in a steel furnace
17.	Design & Simulation of Stewart Platform as a force-torque sensor
18.	Modeling, Simulation & Analysis of Sheet Metal Forming Process
19.	Design & Simulation of solar powered car
20.	Design & Simulation of a compressed air powered engine
21.	Design & Simulation of a Mechanical Spider using linkage
22.	Study of experimental and numerical techniques of modal analysis

23.	Analysis of crack propagation (LEFM & EPFM)
24.	Strengthening of pressure vessels using autofrettage by using FEM
25.	Design, Simulation & Fabrication of cross-flow micro hydro turbine

** **	RAC Lab
SNo	Project Name
1.	Refrigeration using waste heats in car
2.	Solar Sterling engine with parabolic collector
3.	Experimental investigation of an air conditioning system drive by LPG engine
4.	Low pressure solar water heater with auto tracking
5.	Air compressor using crank and slotted link mechanism
6.	Fabrication of Cooling jacket for motorcycle
7.	Electrical power generation system by using Gasifier
8.	Fabrication of Airbag Automation
9.	Fabrication of Life time kit for an Air conditioning
10.	Elimination of carbon particles from exhaust gas
11.	Emission tester for automobile
12.	Experimental investigation Solar Pond integrated with PCM storage
13.	Fabrication of Mini Jet Engine
14.	Visual landing gear arrangement with Tyre Pressure Inflation system
15.	Fabrication of Latent Heat Exchanger
16.	Energy conservation in steam systems
17.	Fabrication of thermo-electric solar air conditioner
18.	Fabrication of Solar Fridge
19.	Parabolic Trough collector cum Vapor Adsorption System
20.	Fabrication of solar water Disalation by using photovoltaic method
21.	D & F of Chemical Processing Plant
22.	Multi-Purpose Ground Dryer (or) Multi-Purpose Dryer and Room Heater
23.	Fabrication of Solar Air Cooler cum Heater
24.	Fabrication of Solar Water Disalation (Purification) by using parabolic method
25.	Waste chill recovery heat exchanger

** **	ANSYS/ MATLAB SOFTWARE Lab
SNo	Project Name
1.	Study CV-AT004 wheel behavior
2.	Optimization of composite air-craft structures using FEM
3.	Analysis of crack propagation (LEFM & EPFM)
4.	Finite element analysis of Design & Fabrication of solar powered car
5.	Finite Element Analysis of a thin composite laminate plate
6.	Finite Element Analysis of Design And Fabrication Of Rock Climbing Robot
7.	Finite Element Analysis Design, Simulation and fabrication of power section of positive displacement motor
8.	Modeling & Simulation of Full Body Maneuvers (Motion) of a human body
9.	Modeling & Simulation of ABS system
10.	Design, Simulation & Fabrication of space frame (chassis) and power train of a smart car
11.	Design, Simulation & Fabrication of steering, suspension and brake system of a smart car
12.	Parametric study of suspension system of a low mass high performance vehicle by using FEM
13.	Study of dynamic characteristics of a hydraulically actuated system by using FEM
14.	Simulation & Modeling of a tracked vehicle
15.	Design & simulation of a natural gas heat exchanger
16.	Design, Simulation & Development of Heat Exchanger for Waste Heat Recovery in a steel furnace
17.	Design & Simulation of Stewart Platform as a force-torque sensor
18.	Modeling, Simulation & Analysis of Sheet Metal Forming Process
19.	Design & Simulation of solar powered car
20.	Design & Simulation of a compressed air powered engine

21.	Design & Simulation of a Mechanical Spider using linkage
22.	Study of experimental and numerical techniques of modal analysis
23.	Analysis of crack propagation (LEFM & EPFM)
24.	Strengthening of pressure vessels using autofrettage by using FEM
25.	Design, Simulation & Fabrication of cross-flow micro hydro turbine

SURESH GYAN VIHAR UNIVERSITY, JAGATPURA JAIPUR.

Department Of Mechanical Engineering B.Tech Syllabus 8th Sem Session 2015-2019 (Onwards)

To be implemented in session 2017-18

Lab code	LabName	Project No	Remarks
** ***	CAD LAB	25	
** ***	CAM LAB	25	
** ***	Project Management Lab(Primevera,Msproject)	25	

** **	CAD Lab
SNo	Project Name
1.	Piston Design
2.	Crank Shaft Mechanism
3.	Knuckle Joint Assembly with detailings
4.	Isometrics drawing
5.	Engine Component Assembly
6.	Cam Follower Mechanism
7.	Water purifier Machine in 3D
8.	Detailings drawings of Engine component
9.	Geometric dimensioning and tolerancing
10.	Mobile casing assembly
11.	Motion Mechanism
12.	Static Analysis
13.	Beam Analysis
14.	Bush Bearings
15.	Abrasive jet Machine fabrication
16.	Turn Table mechanism
17.	Mold cavity design
18.	Analysis of plastic component using Pro-E
19.	Parameterization of components using Pro - E
20.	Family tables & relation using CATIA
21.	Press tool analysis using CATIA
22.	Single point cutting tool - IDEA
23.	Analysis of connecting rod using ANSYS
24.	Design of component and parameterization using Solid Edge
25.	Tire design and manufacturing using DELCAM

** **	CAM Lab
SNo	Project Name
1.	Automatic Tool Store 3 4 5
2.	Programmable Hopper with Computer Control
3.	Programmable gas cutting machine
4.	Measurement using Image Processing
5.	Computer Controlled PCB Drilling Machine
6.	Programmable Ratio Controller
7.	Auto LISP Application Development
8.	Motor Shaft Positioning Indicator
9.	Programmable Drilling Machine
10.	Shop Floor Monitoring System
11.	Machine Monitoring System
12.	Store Automation with MRP
13.	CNC Pallet Changer for Drilling Machine
14.	Computer Controlled Servo Indexing Table
15.	Auto Shape Finder
16.	Production line monitoring system
17.	Quality Inspection Using Image Processing
18.	Automated Drawing Using C & Auto CAD
19.	Computer Based Vice
20.	Computer Based Color Identification System
21.	Generate NC codes programming of rod Alloy steel
22.	APT tool coding of AL sheet metal
23.	Face cutting generation by using CNC turn in Alloy
24.	Threading section generation by using CNC
25.	BSW thread generation of alloy shaft

** **	Project Management Lab(Primevera,Msproject)
SNo	Project Name
1.	Generic product development process
2.	Market Pull Products
3.	Need analysis- Problem Formulation
4.	Identification and Analysis
5.	Generation of Alternatives and Concept
6.	Concept generation- a creative process
7.	Fear of criticism and Psychological set
8.	Concept feasibility and Concept Selection
9.	Preliminary & detailed design
10.	Design Review
11.	Preliminary design- Identification of subsystems
12.	Detailed design of subsystems
13.	component design
14.	Preparation of assembly drawings
15.	Review of product design from point of view of Manufacturing
16.	Ergonomics
17.	Lean Manufacturing
18.	Agile Manufacturing
19.	Sustainable design
20.	Design Team Staffing and Organization
21.	Identification of Risk Areas
22.	Risk Analysis
23.	Project Execution and Evaluation Product Launch Strategies
24.	Project Planning – Project Task matrix
25.	Estimation of time & resources, project scheduling

** **	Project Management Lab(Primevera,Msproject)
SNo	Project Name
1.	Generic product development process
2.	Market Pull Products
3.	Need analysis- Problem Formulation
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15.	Review of product design from point of view of Manufacturing
16.	Ergonomics
17.	Lean Manufacturing
18.	Agile Manufacturing
19.	Sustainable design
20.	Design Team Staffing and Organization
21.	Identification of Risk Areas
22.	Risk Analysis
23.	Project Execution and Evaluation Product Launch Strategies
24.	Project Planning – Project Task matrix
25.	Estimation of time & resources, project scheduling



LAB PROJECT GUIDANCE OF

M.TECH (DUAL + CORE)

MANUFACTURING ENGINEERING

GYAN VIHAR SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

EDITION 2016

SURESH GYAN VIHAR UNIVERSITY, JAGATPURA JAIPUR.
Department Of Mechanical Engineering B.Tech Syllabus 3th Sem Session 2015-2019 (Onwards)
To be implemented in session 2016-17

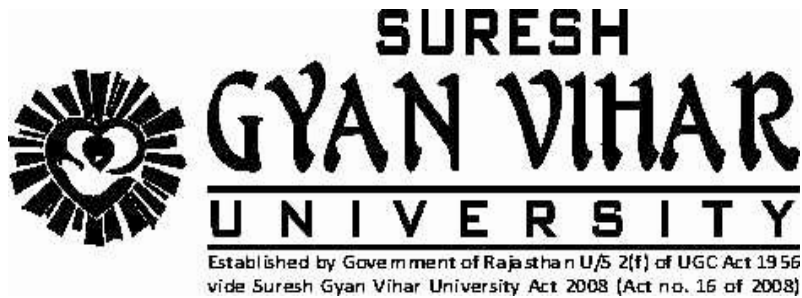
Lab code	LabName	Project No	Remarks
** ***	Advance Manufacturing Lab	25	
ME 456	Machining and Machine Tool Design Lab	25	
ME 458	Software Lab (Autocad-3D,Solid Works,Pro-E Lab,Ansys)	25	

** **	Advance Manufacturing Lab
SNo	Project Name
1.	Preparation of Photovoltaic Silicon
2.	Rate-controlled constrained equilibrium: A basis for effective coupling of comprehensive chemical kinetics and CFD
3.	A fundamental study of deformation mechanisms in advanced polycrystalline nickel-base superalloys
4.	EPSRC Centre for Innovative Manufacturing in Composites
5.	Fibre waviness defects in composite structures
6.	Fibre waviness defects in composite structures
7.	G8-2012 Material Efficiency - A first step toward sustainable manufacture
8.	High Performance Ductile Composite Technology (HiPerDuCT)
9.	Industrial Doctorate Centre in Composites Manufacture
10.	Modern metals processing: transfer of knowledge and core skills to new and emerging technologies
11.	Platform: Fracture, Fatigue and Durability of Advanced Alloys and Composites for High Performance Applications
12.	Probabilistic Assessment of Fatigue Delamination Growth in Fibre Reinforced Composite Laminates
13.	Processing of polymer nanocomposites
14.	SHIELD - Sustainable High Energy Absorbing Lightweight Material Development
15.	Structural control of Ti alloys for high strength, high toughness
16.	Sustainable Materials - A Global Challenge
17.	Towards Affordable, Closed-Loop Recyclable Future Low Carbon Vehicle Structures - TARF-LCV
18.	High Efficiency Electrical Energy Conversion
19.	3-D Dynamic Problems for Cracked Layered Materials with Contact Interaction of Crack Faces

20.	A Centre for Innovative Manufacturing and Construction
21.	A Discrete Event Simulator for Modelling Support Services in an Engineering Environment
22.	A General Approach to the Analysis of Fatigue Cracks in Lubricated Contacts
23.	A new method for dynamic analysis of plates and plate assemblies
24.	A Novel Framework For Predicting, Measuring and Analysing Weld Induced Residual Stresses
25.	Adsorption and Adhesion

ME 456	Machining and Machine Tool Design Lab
SNo	Project Name
1.	Automatic Tool Store 3 4 5
2.	Programmable Hopper with Computer Control
3.	Programmable gas cutting machine
4.	Measurement using Image Processing
5.	Computer Controlled PCB Drilling Machine
6.	Programmable Ratio Controller
7.	Auto LISP Application Development
8.	Motor Shaft Positioning Indicator
9.	Programmable Drilling Machine
10.	Shop Floor Monitoring System
11.	Machine Monitoring System
12.	Store Automation with MRP
13.	CNC Pallet Changer for Drilling Machine
14.	Computer Controlled Servo Indexing Table
15.	Auto Shape Finder
16.	Production line monitoring system
17.	Quality Inspection Using Image Processing
18.	Automated Drawing Using C & Auto CAD
19.	Computer Based Vice
20.	Computer Based Color Identification System
21.	Generate NC codes programming of rod Alloy steel
22.	APT tool coding of AL sheet metal
23.	Face cutting generation by using CNC turn in Alloy
24.	Threading section generation by using CNC
25.	BSW thread generation of alloy shaft

ME 458	Software Lab (Autocad-3D,Solid Works,Pro-E Lab,Ansys)
SNo	Project Name
1.	Analysis of plastic component using Pro-E
2.	Parameterization of components using Pro – E
3.	Family tables & relation using CATIA
4.	Press tool analysis using CATIA
5.	Single point cutting tool – IDEA
6.	Analysis of connecting rod using ANSYS
7.	Design of component and parameterization using Solid Edge
8.	Analysis of plastic component using Pro-E
9.	Parameterization of components using Pro - E
10.	Family tables & relation using CATIA
11.	Press tool analysis using CATIA
12.	Single point cutting tool - IDEA
13.	Analysis of connecting rod using ANSYS
14.	Design of component and parameterization using Solid Edge
15.	Tire design and manufacturing using DELCAM
16.	Design of power filter using Pro-E
17.	A Cross Flow Wind turbine
18.	Harden-ability testing of Carbon Steel
19.	Aerofoil Blades propeller
20.	Programmable Hopper with 4 Computer Control
21.	Programmable gas cutting machine
22.	Measurement using Image Processing
23.	Computer Controlled PCB Drilling Machine
24.	Programmable Ratio Controller
25.	Auto LISP Application Development



LAB PROJECT GUIDANCE OF

B.TECH

AUTOMOBILE ENGINEERING

GYAN VIHAR SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

EDITION 2016

SURESH GYAN VIHAR UNIVERSITY, JAGATPURA JAIPUR.
Department Of Mechanical Engineering B.Tech Automobile Syllabus 3th Sem Session 2016-2020
(Onwards)
To be implemented in session 2016-17

Lab code	LabName	Project No	Remarks
ME 251	Thermal Engg. Lab. – I	25	
ME 255	Production Process Lab	25	
ME 261	Engine testing lab	25	

ME 251	Thermal Engg. Lab. – I
SNo	Project Name
1.	Hydro Power Projects
2.	Water Turbine Power generation system
3.	ICE Project
4.	Bio Gas Powered Vehicle
5.	Solar Powered Refrigerator
6.	Solar Powered Air Conditioner
7.	Mini Scooter
8.	Multi-objective Optimization of Solar Assisted Absorption Cooling System
9.	Solar Energy to Drive Half-Effect Absorption Cooling System
10.	Improving of the Heat Transfer from a Moulding Block in an Industrial Oven
11.	Overview of Vapor Absorption Cooling Systems
12.	Power Generation from Railway Track
13.	Carbon dioxide in Ice Rink Refrigeration
14.	Piezoelectrically Driven Thermoacoustic Refrigerator
15.	Strategies for Co-operated Wood Chip Fired and Municipal Waste Fired Combined Heat and Power Plants
16.	Solar Absorption Refrigeration System Using New Working Fluid Pairs
17.	Experimental Investigation of Heat Recovery from R744 based Refrigeration System
18.	Impingement Cooling: Heat Transfer Measurement by Liquid Crystal Thermography
19.	Optically Selective Surfaces in Low Concentrating PV/T Systems
20.	Nanochannel Fabrication using Thermomechanical Deformation of Thermoplastics
21.	Simulating Fluid Flow and Heat Transfer Using Dissipative Particle Dynamics
22.	Application of Evaporative Air Coolers Coupled With Solar Water Heater for Dehumidification of Indoor Air
23.	Development of a Program to Determine Hidden Performance Parameters of a Gasturbine
24.	Modeling of Direct Contact Condensation With OpenFOAM
25.	Aerodynamic Loads on External Stores – Saab 39 Gripen: Evaluation of CFD methods for estimating loads on external stores

AE 201	Production Process-I
SNo	Project Name
1.	Tyre Coupling
2.	Automatic Intelligent Hydro Irrigation System
3.	Car Theft Prevention Using Code Locking System
4.	Wire Rope Elevator
5.	Fabrication of Coconut Tree Sprayer
6.	Automatic Coil Winding Machine
7.	Pneumatic Chapathi Machine
8.	Mechanical Braking System
9.	Automatic Tyre Pressure Inflation System
10.	Rollator's Parking Brake System
11.	Visual Tracking of Indoor Flying Robots
12.	Development of Vision Systems for Micro Assembly Operations
13.	Radial Piston Engine
14.	Geothermal Heating and Cooling
15.	Air Driven Engine
16.	Vacuum Braking System
17.	Cryogenic Rocket Engine Hydrogen Fuel System
18.	LPG-Refrigerator
19.	Content Based Search Of Mechanical Assemblies
20.	Buoyancy Shoe
21.	Automatic Guided Vehicles
22.	Cutting Rewinding Machine
23.	Magneto Abrasive Flow Machining
24.	Stair Climbing Robot
25.	Speed Vehicle Sensing

ME 261	Engine testing lab
SNo	Project Name
1.	MicroCSPs Contribution on the Management of an Electrical Grid Including Renewable Energy Sources
2.	Continuation of Engine Ignition Studies
3.	Closed Loop Combustion Control for SI Engines
4.	Tyco Fire Protection Products
5.	Chrysler Spray Test
6.	Senior Design: AFRL Design Challenge Project Sequence
7.	Experimental Investigation for Characterization of a High Pressure 4-hole Impinging Jet Injector under Diesel Engine Conditions
8.	Understanding the Cavity Mode of Tires
9.	Support of RMCP Phase II SBIR
10.	Engine Preparation and Instrumentation for Development and Test of the Nostrum Cycle on a Cummins ISB Diesel Engine
11.	GOALI: Collaborative Research: Easily Verifiable Controller Design
12.	Senior Design: Aquatic Fitness Tool
13.	Senior Design: Rear Differential Case Testing
14.	MRI: Acquisition of a High Resolution Transmission Electron Microscope for In Situ Microscopy Research and Education
15.	Collaborative Teaching
16.	NRI: Co-Robots to Engage Next Generation of Students in STEM Learning
17.	Ford Diesel Spray Studies: Rate of Injection Measurement Phase 2
18.	Rapid Screening with Paddle Fast Pyrolysis Systems
19.	Evaporation Sub-Model Development for Volume of Fluid (eVOF) Method Applicable to Spray-Wall Interaction Including Film Characteristics with Validation at High Pressure-Temperature Conditions
20.	Nostrum Engine Dynamometer Studies and Analysis of Nostrum Cycle and Injectors on Cummins 6.7L ISB Diesel Engine
21.	Senior Design: Gear Housing Joint Design
22.	Nostrum Continued Engine Research

23.	Engine Development and Instrumentation for the Nostrum Cycle on Cummins ISB Diesel Engine
24.	Ignition Studies
25.	Study of Two-Phase Flow Behavior in PEM Fuel Cell Flow Channels

SURESH GYAN VIHAR UNIVERSITY, JAGATPURA JAIPUR.
Department Of Mechanical Engineering B.Tech Automobile Syllabus 4th Sem Session 2016-2020
(Onwards)
To be implemented in session 2016-17

Lab code	LabName	Project No	Remarks
AE 355	Kinematics of machine lab	25	
AE 256	Fluid Engineering Lab	25	
AE -260	Motor Vehicle Technology Lab	25	

AE 355	Kinematics of machine lab
SNo	Project Name
1.	Hydraulic floor crane
2.	pneumatic can crusher with conveyor belt
3.	groundnut separator mechanical engineering
4.	Stewart Platform Forward Kinematics solver
5.	Robotics arm simulation Using DMU Kinematics in CATIA V5
6.	Multi discipline assembly kinematics simulation
7.	Backhoe Project in Kinematics
8.	Legged Walker
9.	CONVEYOR/ SHIFTING BOX MECHANISM
10.	Design of 8-legged multipurpose robot
11.	Mechanical Project on Auto Turning Fuel Valve
12.	ANTI THEFT WHEEL LOCKING SYSTEM
13.	A NOVEL REAR END COLLISION ACCIDENT AVOIDANCE SYSTEM WITH DYNAMIC SPEED GOVERNOR
14.	Design and Fabrication Of Mini Hydraulic Press Machine
15.	Design and Fabrication of a Kinematic Walker
16.	Fabrication Of Pedal Powered Dual Chain Hacksaw Machine
17.	FABRICATION OF HIGHSPEED RECIPROCATING HACKSAW MACHINE
18.	Design And Fabrication Of Hydraulic Arm
19.	FABRICATION OF VERTICAL AXIS WIND TURBINE
20.	DESIGN AND FABRICATION OF AIR OPERATED MIRROR CUTTING MACHINE
21.	Fabrication Of Gear Box
22.	DESIGN AND ANALYSIS OF SCISSOR JACK
23.	DESIGN OF HYDRAULIC JACK AND ANALYSIS
24.	Design and Fabrication of a Manually Operated Paper Recycling Machine
25.	CNC PNEUMATIC AUTOFEED PUNCHING MACHINE

AE 256	Fluid Engineering Lab
SNo	Project Name
1.	Fabrication of Pneumatic 4-axis JCB Equipment
2.	Automatic sensor based wall painting robot
3.	PLC based automatic multi-machine lubrication system
4.	Fabrication of queries controlling system for two wheeler
5.	Automatic Pneumatic Paper cup folding Machine
6.	Automatic paint spraying Equipment
7.	Automatic pneumatic vice and jack
8.	Fabrication of hydraulic operated adaptive breaking system
9.	Fabrication of Pneumatic operated ladle tilting mechanism for foundries
10.	Automatic bar feeding mechanism for hack saw machine
11.	Fabrication of hydraulic revolving multi-purpose trailer
12.	Fabrication of Double axis pneumatic JCB Equipment
13.	Automatic Electro-Hydraulic Braking System for Four Wheeler
14.	Fabrication Automatic differential unit locking System
15.	Compressed air production using vehicle suspensor
16.	Fabrication of Pneumatic Operated Automatic packing Control Machine
17.	Fabrication of Hydraulic Pallet Truck
18.	Fabrication of Automatic Pneumatic Chapathi making machine
19.	Fabrication of Pneumatic Auto gear changer
20.	Fabrication of automatic pneumatic reciprocating grinding machine
21.	Auto Indexing gear cutting attachment for pneumatic shaping Machine
22.	Electronic Assisted hydraulic breaking system
23.	Automatic Distance Measurement and Braking System By using Ultrasonic Waves
24.	Fabrication of Pneumatic Auto feed Bottle washing Machine
25.	Fabrication of Pneumatic Reciprocating Water Pumping System

AE 260	Motor Vehicle Technology Lab
SNo	Project Name
1.	Over speed indication and Automatic accident Avoiding System for four wheeler
2.	Fabrication of turbo super charger for two wheeler
3.	An intelligent mobile robot navigation technique using RFID Technology
4.	Fabrication of Automatic hand break Release
5.	Automatic pneumatic bumper for four wheeler
6.	Fabrication of Foldable Electric Go Bed Drive
7.	Shock Absorber Test rig using Cam and sensors
8.	The development of intelligent home security robot (IEEE 2005)
9.	Automatic temperature controller with cooling system for car
10.	Fabrication of four wheel steering system
11.	SMS Based automatic vehicle accident information system
12.	Over speed indication and Automatic accident Avoiding System for four wheeler
13.	Hydraulic hybrid system for four wheeler
14.	Efficiency Increasing System in Automobile by using preheating method
15.	A robot system for fire fighting in tunnels (IEEE 2005)
16.	Remote controlled material handling equipment
17.	Electronic Fuel Injection (EFI) system for Two wheeler
18.	Fabrication of Automatic Electro-Hydraulic Jack for Four Wheeler
19.	Automatic reserve indication system
20.	D & F of Triangular air Compressor with Common Compression Chamber
21.	Button operated electro-magnetic gear shifting system for two wheeler
22.	SMS based automatic two wheeler locking system
23.	Fabrication of queries controlling system for two wheeler
24.	Fabrication of man less defense
25.	GPS based vehicle root tracking system

SURESH GYAN VIHAR UNIVERSITY, JAGATPURA JAIPUR.
Department Of Mechanical Engineering B.Tech Automobile Syllabus 5th Sem Session 2016-2020
(Onwards)
To be implemented in session 2016-17

Lab code	LabName	Project No	Remarks
AE 351	Thermal engg. Lab-II	25	
AE 353	Automotive electricals and electronics lab	25	
ME 254	Machine Element Design Lab	25	
AE 357	Auto shop practice lab	25	

AE 351	Thermal Engg. Lab-II
SNo	Project Name
1.	Fabrication of thermo-electric solar air conditioner
2.	Water Cooler cum Air Conditioner
3.	Fabrication of thermo-electric refrigerator
4.	Transformer heat reduction system
5.	Fabrication of furnace using infrared Lamp
6.	Water cooler cum Water heater by using refrigeration System
7.	Remote controlled boiler flame adjustment system
8.	Fabrication of Automatic temperature controller with cooling system
9.	Fabrication of Hot and Cold Water Dispenser
10.	Fabrication of Solar air conditioning Machine
11.	Waste chill recovery heat exchanger
12.	Fabrication of Solar Air Conditioner
13.	Fabrication of Mist Coolant system
14.	Automatic Electro-plating coating process
15.	Fabrication of Solar Water Heater by using parabolic collector
16.	Electrical Power Generation using Thermal Power Plant
17.	Fabrication of Solar refrigeration system
18.	Fabrication of Bottle Cooler
19.	Fabrication of Solar Fridge
20.	Fabrication of Solar Kettle (or) Solar Parabolic Collector
21.	Fabrication of Solar Air Cooler
22.	Fabrication of Activated Carbon Manufacturing Plant
23.	Fabrication of Mini Water Heater
24.	Automatic pneumatic vulcanizing Machine using heat sensor
25.	Solar Water Purification by using thermal method

AE 353	Automotive electricals and electronics lab
SNo	Project Name
1.	Fabrication of Remote operated weapon System
2.	Automatic double axis Pneumatic JCB
3.	Automatic Car Parking System for apartment Building
4.	PLC based automatic Multi-machine Lubrication System
5.	Electronic Fuel Injection (EFI) system for Two wheeler
6.	Cell phone controlled pick and place robot
7.	Automatic boring mechanism using foundries
8.	SMS based automatic pneumatic Punching and riveting machine
9.	Fabrication of Automatic grease Gun
10.	Video Analyzing remote controlled vacuum Cleaner
11.	SMS based automatic vehicle accident information system
12.	Automatic Differential unit Locking System for four wheeler
13.	Automatic Distance Measurement and Braking System By using Ultrasonic Waves
14.	SMS based Bomb detecting robot
15.	Fabrication of Automatic Shot blasting machine
16.	Automatic wind mill blade pitch controlling system
17.	Automatic Vegetable (or) Lemon Cutting machine
18.	Fabrication of Automatic Vehicle Over speed controlling system for School Zone
19.	Remote controlled air craft (Flying Model)
20.	GPS based vehicle root tracking system
21.	Fabrication of Microcontroller Based Self centering Four-jaw Chuck
22.	Fabrication of Automatic temperature controller with cooling system
23.	Remote controlled material handling motorized crane
24.	GPS based blind people path announcement system
25.	Fabrication of Remote operated weapon System

ME 254	Machine Element Design Lab
SNo	Project Name
1.	Fabrication Of Hydraulic Pipe Clamp Pressing
2.	Machine Design and Fabrication of Pneumatic reciprocating Water Pumping system
3.	AUTOMATIC PNEUMATIC PAPER CUTTING MACHINE
4.	Design and Fabrication Of Agricultural Cutter Using
5.	Four Bar Mechanism
6.	FABRICATION HIGH PRESSURE PNEUMATIC MACHINE VICE
7.	Design and fabrication of pipe inspection robot
8.	Front Wheel Steering System with Movable Headlights
9.	CROP HARVESTER IN AGRICULTURAL
10.	DESIGN AND FABRICATION OF WORKING MODEL OF ABRASIVE JET MACHINE
11.	EFFICIENCY INCREASING SYSTEM IN AUTOMOBILE
12.	AUTO INDEXING GEAR CUTTING ATTACHMENT FOR PNEUMATIC SHAPING MACHINE
13.	PNEUMATIC SOLENOID OPERATED GRINDING MACHINE
14.	Pneumatic Cup Making Machine
15.	HYDRAULIC PIPE BENDING MACHINE
16.	COLD CHAMBER DIE CASTING MACHINE
17.	CNC PNEUMATIC AUTOFEED PUNCHING MACHINE
18.	Swing Electricity Generation System
19.	Spring Testing Machine
20.	Working Model of Levers
21.	Design and Fabrication of a Kinematic Walker
22.	Fabrication Of Pedal Powered Dual Chain Hacksaw Machine
23.	FABRICATION OF HIGHSPEED RECIPROCATING HACKSAW MACHINE
24.	Design And Fabrication Of Hydraulic Arm
25.	FABRICATION OF VERTICAL AXIS WIND TURBINE

AE 357	Auto shop practice lab
SNo	Project Name
1.	Industrial Chain Diversification into Automobile Chain
2.	Modern Automobile Workshop cum Service Station with Modern Equipments
3.	Computerised Machines (Specially for Maruti Vehicles)
4.	Mufflers/Silencers Sintered Bushes Used in Automobiles Steel Forging
5.	Rubber compound for Automobile Industry
6.	Purification of Used Engine Oil By Wiper Evaporation System
7.	Automobile Piston Ring Brake Lining
8.	Automotive Filters
9.	Automobile Radiator
10.	Two post vehicle lift suitable for lifting Cars and LCVs upto 3 Tons capacity
11.	Automobile Rear View Mirrors for Two Wheelers
12.	Auto Cables for Brakes Unit
13.	Automobiles Piston for Two Wheeler
14.	Automobile Fuses
15.	Automobile Body Building
16.	Automobile Gears
17.	Automobile Radiators
18.	Automobile Dynamo
19.	Automobile Workshop Garage & Service
20.	Automobile Accessories in Stainless Steel (Automobile Jet Nozzles & Spindles)
21.	Automobile Radiator
22.	Automobile Silencers
23.	Automobile Service Station & Retreading
24.	Automobile Brake Shoe
25.	ELECTRIC SCOOTER

SURESH GYAN VIHAR UNIVERSITY, JAGATPURA JAIPUR.
Department Of Mechanical Engineering B.Tech Automobile Syllabus 6th Sem Session 2016-2020
(Onwards)
To be implemented in session 2016-17

Lab code	LabName	Project No	Remarks
AE 354	Vehicle dynamics lab	25	
ME 357	Mechanical Vibration & Noise Vibration Lab	25	
AE 352	Auto transmission lab	25	

AE 354	Vehicle dynamics lab
SNo	Project Name
1.	To Design a Prototype of an Automated Gun that can track & target an object in 2 DOF with the help of video camera
2.	Antenna Azimuth Position Control System
3.	Design study of Rotary Engine
4.	Vibration Analysis & balancing of Industrial Rotors
5.	Design and Fabrication of Plunge EDM Machine
6.	Design & Analysis of a Human Powered Vehicle
7.	Fire-Power and Stability Control of a Tank
8.	Hydrogen Gas Augmentation of a CNG operated SI Engine
9.	CFD Solution of Internal (shock tube and couette flow) & External (Airfoil and cylinder) flow and comparison with Experimental data
10.	Fuel Free Propulsion System for Satellite Station-keeping
11.	Semi-Active Suspension System
12.	CNG Conversion of a CI Engine
13.	Launching mechanism of an Unmanned Ariel Vehicle (UAV)
14.	Semi Active Suspension System Study, Design & Fabrication
15.	Study of parameters necessary to convert a diesel engine to CNG and on successful completion of study, development of a prototype
16.	Design & Fabrication of Suspension system Test Bench
17.	Optimization of composite air-craft structures using FEM
18.	Development of a light weight omnidirectional vehicle(prototype)
19.	Hydrogen Augmented CNG Engine
20.	Development of Bio-Oil Extraction Machines
21.	Mud Motors Performance Optimization
22.	Dual Fuel Engine
23.	Design of skies for lama helicopter
24.	Design, Development & Fabrication of an Optimized Gasifier
25.	Design & Fabrication of a Hovercraft

ME 357	Mechanical Vibration & Noise Vibration Lab
SNo	Project Name
1.	Heavily Loaded Vehicle Tires: Analysis and Characterization
2.	mechanical shaker
3.	Working model of natural and damping frequencies
4.	Vibration Analysis & balancing of Industrial Rotor
5.	Working model of Frequency dependent human response to sound
6.	Working Model of ,Sound pressure dependent human response
7.	Demo Model of Decibel scale calculator
8.	Working Model of calculate sound power, sound intensity and sound pressure level
9.	Sound spectra
10.	Demo model of Octave band analysis. Loudness. Noise
11.	Acoustic barriers
12.	Noise control at the receiver
13.	Pass-by Noise Reduction in Motorcycles by designing a Hybrid Muffler
14.	Shock Absorber Design for Rickshaw
15.	Smart Pump
16.	Mode Shapes of Cantilever beam
17.	Mode Shapes of Aeroplane Model
18.	Modal analysis of a L-Shaped Structure
19.	Vibration Analysis of Multistorey Building
20.	Model Frequencies of Steering Wheel
21.	Electro Dynamic Shaker System
22.	Electro Mechanical Shaker system
23.	Frictionless Electromagnetic Braking System
24.	Rollator's Parking Brake System
25.	Vacuum Braking System

AE 352	Auto Transmission lab
SNo	Project Name
1.	Flow of power transmitted in front wheel drive, rear wheel drive and four wheel drive.
2.	Digital Vehicle Fuel Level Indicator
3.	Fabrication of Hydraulic Power Plant
4.	Fuzzy Logic Vehicle Traffic Regulation
5.	Vehicle Immobilization System
6.	Vehicle Loan Watching System
7.	Mechanical Braking System
8.	Automatic Tyre Pressure Inflation System
9.	Rollator's Parking Brake System
10.	Visual Tracking of Indoor Flying Robots
11.	Development of Vision Systems for Micro Assembly Operations
12.	Radial Piston Engine
13.	Geothermal Heating and Cooling
14.	Air Driven Engine
15.	Vacuum Braking System
16.	Cryogenic Rocket Engine Hydrogen Fuel System
17.	LPG-Refrigerator
18.	Content Based Search Of Mechanical Assemblies
19.	Buoyancy Shoe
20.	Automatic Guided Vehicles
21.	Cutting Rewinding Machine
22.	Magneto Abrasive Flow Machining
23.	Stair Climbing Robot
24.	Key Controlled Forklift
25.	Vehicle due Immobilization Using PC

SURESH GYAN VIHAR UNIVERSITY, JAGATPURA JAIPUR.

**Department Of Mechanical Engineering B.Tech Automobile Syllabus 7th Sem Session 2016-2020
(Onwards)**

To be implemented in session 2016-17

Lab code	LabName	Project No	Remarks
AE 356	Automotive system and pollution Lab	25	
AE 453	CAD Lab	25	
AE 455	Body Engineering Lab	25	

AE 356	Automotive system and pollution lab
SNo	Project Name
1.	Electronic Fuel Injection (EFI) system for Two wheeler
2.	Efficiency Increasing System in Automobile by using preheating method
3.	D & F of Triangular air Compressor with Common Compression Chamber
4.	Automatic temperature controller with cooling system for car
5.	Efficiency Increasing System in Automobile by using preheating method
6.	Fabrication of Two Engine Synchronization for Four Wheeler
7.	Electrical Power Generation system using Railway track
8.	Automatic Break Failure indicator and Engine Over Heating Alarm
9.	Compressed air production using vehicle suspensor
10.	Intelligent Active Suspension system for two wheeler
11.	Automatic Vehicle Over speed Controlling System
12.	Fabrication of Electro-Magnetic braking System For Automobile
13.	Intelligent Braking System in Four Wheeler (IBS)
14.	Emergency Braking System in Four Wheeler (EBS)
15.	Anti-Lock Braking System In Four wheeler (ABS)
16.	Automatic Distance Measurement and Braking System By using Ultrasonic Waves
17.	Fabrication of Automatic steering control system for automobile
18.	Fabrication of Multi-Engine compressor
19.	Fabrication of Solar Race Car
20.	Electro-Hydraulic System for Automation in Four Wheeler
21.	Automatic material handling Fire Fighting Robot
22.	Automatic Vehicle Accident prevention system
23.	Efficiency increasing system in automobile
24.	Automatic paint spraying pick and place Equipment
25.	Fabrication of Lube oil cooler

AE 453	CAD LAB
SNo	Project Name
1.	Piston Design
2.	Cranck Shaft Mechanism
3.	Knuckle Joint Assembly with detailings
4.	Isometrics drawing
5.	Engine Component Assembly
6.	Cam Follower Mechanism
7.	Water purifier Machine in 3D
8.	Deatilings drawings of Engine component
9.	Geometric dimensioning and tolearencing
10.	Mobile casing assembly
11.	Motion Mechanism
12.	Static Analysis
13.	Beam Analysis
14.	Bush Bearings
15.	Abrasive jet Machine fabrication
16.	Turn Table mechanism
17.	Mold cavity design
18.	Analysis of plastic component using Pro-E
19.	Parameterization of components using Pro - E
20.	Family tables & relation using CATIA
21.	Press tool analysis using CATIA
22.	Single point cutting tool - IDEA
23.	Analysis of connecting rod using ANSYS
24.	Design of component and parameterization using Solid Edge
25.	Tire design and manufacturing using DELCAM

AE 455	Body Engineering Lab
SNo	Project Name
1.	System ensuring seat belt application
2.	Advance antitheft system for two wheeler
3.	Fabrication of electric two wheeler
4.	Fabrication of demonstrative model of fish like propulsion system
5.	Fabrication of speed breaker electricity generation unit
6.	Fabrication of solar operated tricycle
7.	Fabrication of water purifying bicycle
8.	Fabrication of wind tunnel for vehicle aerodynamics testing
9.	Fabrication of remote operated weapon system
10.	Fabrication of automated multi-floor car parking system for four wheelers
11.	Fabrication of four wheel steering system
12.	Fabrication of parallel parking vehicle
13.	Fabrication of 360 degree turning vehicle
14.	Fabrication of regenerative braking vehicle
15.	Fabrication of in wheel motor
16.	Fabrication of electric car jack
17.	Fabrication of wind power generation system using railway
18.	Fabrication of electromagnetic braking vehicle
19.	Fabrication of hydraulic jack
20.	Fabrication of automatic path finding vehicle
21.	Fabrication of model demonstrating wind mill as supplementary power source for electric vehicles
22.	Fabrication of special robotic vehicle for bomb defusing squad
23.	Fabrication of demonstrative model of remote operated extreme load carrying robotic interconnecting units
24.	Fabrication of air powered vehicle
25.	Fabrication of PC operated versatile robotic vehicle

SURESH GYAN VIHAR UNIVERSITY, JAGATPURA JAIPUR.
Department Of Mechanical Engineering B.Tech Automobile Syllabus 8th Sem Session 2016-2020
(Onwards)
To be implemented in session 2016-17

Lab code	LabName	Project No	Remarks
AE 454	Auto Reconditioning lab	25	
AE 452	Auto Maintenance lab	25	
AE 456	Computational fljid dynamics lab	25	

AE 454	Auto Reconditioning Lab
SNo	Project Name
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AE 452	Auto Maintenance lab
SNo	Project Name
1.	Fabrication of Foldable Electric Go Bed Drive
2.	Fabrication of four wheel steering system
3.	Over speed indication and Automatic accident Avoiding System for four wheeler
4.	Efficiency Increasing System in Automobile by using preheating method
5.	Electronic Fuel Injection (EFI) system for Two wheeler
6.	D & F of Triangular air Compressor with Common Compression Chamber
7.	SMS based automatic two wheeler locking system
8.	Fabrication of man less defense
9.	Fabrication of Two Engine Synchronization for Four Wheeler
10.	Automatic sensor based wall painting robot
11.	Fabrication of Electric Two Wheeler
12.	Automatic Differential Unit locking system for Automobile
13.	Electronic assisted hydraulic braking system
14.	SMS based vehicle Ignition controlling system
15.	Electrical Power Generation system using Railway track
16.	Fabrication of Automatic Vehicle Over speed controlling system for School Zone
17.	Fabrication of three axis pneumatic modern trailer
18.	Automatic Break Failure indicator and Engine Over Heating Alarm
19.	Two Wheeler Automation with security System
20.	Combined hydraulic and disk break
21.	Compressed air production using vehicle suspensor
22.	Remote controlled air craft (Flying Model)
23.	Automatic Pneumatic welding Robot
24.	Intelligent Active Suspension system for two wheeler
25.	Remote operated weapon system

AE 456	Computational fluid dynamics lab
SNo	Project Name
1.	HVAC Capability of the Proposed Airport Design Considering Real Heat Loading
2.	Structural Assessment of Tower Subjected to Hydrodynamic Wind and Wave Loads
3.	Measuring Lift & Drag Forces for a Flow Over Formula 1 Car's Rear Wing
4.	Simulating Air and Fuel Flow Inside the Modified Inlet Duct to Visualize Flow
5.	CFD Simulation of Exhaust Gas Dispersion into Atmosphere from Industrial Stack
6.	Aerodynamics of the New concept & Helps in Reducing the Design Cycle
7.	CFD Flow Analysis Through Diffuser Project for One of the Top Air Conditioner Company
8.	Visualization of Flow Pattern Inside the Duct Bend and Optimizing the Design
9.	Obtaining Droplet Size Distribution of Liquid Droplets from Nozzle to Venturi
10.	CFD helps to Predict the Flow Behavior Inside Building HVAC Application
11.	Flow Behavior of Spray Nozzle Design Analysis for the Gas Scrubbing Application
12.	CFD Help to Performance Optimization of Radiator Ring Fan Design
13.	Thermal Flow Analysis of Open Street Between Two Buildings
14.	Analyze the Liquid and Gas Flow Behavior in Venture Scrubbe
15.	Separation Efficiency Estimation of Oil and Gas Separator
16.	CFD Analysis of Air Flow inside Oil Tanks Provided to Scavenge the Fuel
17.	Improving Air Flow Uniformity at Burner Exit by Effective Flow Distribution in Wind Box
18.	Flow Patterns of the Air Inside the Ducts and Installed Trays in Vertical Farming System
19.	Pressure Drop Analysis of Flow through Louver System
20.	Design Optimization of Cooling Component through CFD Analysis
21.	COMPUTATIONAL ANALYSIS OF INTAKE MANIFOLD DESIGN OF DIESEL ENGINE FOR LIGHT COMMERCIAL VEHICLE
22.	SPRAY PATTERN RECOGNITION FOR MULTI-HOLE GASOLINE DIRECT

	INJECTORS USING CFD MODELING
23.	DESIGN AND ANALYSIS OF A CERAMIC HEAT-EXCHANGER USING CFD SIMULATIONS
24.	PERFORMANCE OPTIMIZATION OF DIESEL ENGINES THROUGH OPTIMAL VALVE-LIFT USING CFD SIMULATIONS
25.	PERFORMANCE IMPROVEMENT OF TURBINE-BLADE COOLING USING RIBBED PASSAGES THROUGH CFD SIMULATIONS