

**A D PATEL INSTITUTE OF TECHNOLOGY**  
**MECHANICAL ENGINEERING DEPARTMENT**  
**AY-2011-12, Semester 2, Project Titles**

Group. No	Project Title
1	Design & Development of water Floating pump for rivers and canals
2	Study and Performance analysis of vertical axis wind turbine
3	CFD Analysis of Centrifugal Pump, Centrifugal Compressor, Centrifugal Blower
4	Design, Fabrication and Testing of Pump working in turbine mode for micro hydro power plants
5	Analysis & Energy Audit on Thermal System
6	CFD technique as a tool for prediction of phenomenon occurring in 2D/3D gas combustion chamber
7	To design counter flow heat exchangers
8	Design and Fabrication of biomass Gasifier of capacity 2KW
9	Design & Development of small capacity Aqua Ammonia Vapor Absorption
10	FEA Simulation of drawing process
11	Design of Polygon Turning Mechanism
12	Gear tooth profile analysis using FEM
13	Kinematic & workspace analysis of 3Degree of freedom parallel manipulator
14	Coding of crane using MATLAB
15	Minimization of Metal loss and defects in Casting Process
16	Design of horizontal carousel system
17	Design and model of bucket Elevator
18	Design & fabrication for the prototype of Aircaster
19	Development of a simple FE solver
20	Kinematic & Dynamic Analysis of a 2 D.O.F robotic arm
21	Design of CAD model and coding of Toggle Jack
22	Automatic bottle filling liquid system using PLC

**A D PATEL INSTITUTE OF TECHNOLOGY**  
**MECHANICAL ENGINEERING DEPARTMENT**  
**AY-2012-13, Semester 1, Project Titles**

Group. No	Project Title
1	To find out the causes & to prevent the leakage of a centrifugal pump
2	CFD analysis of steam jet ejector
3	Energy Enhancement of combined cycle power plant
4	Design of solar dryer
5	Testing of small capacity vapor absorption system using aqua ammonia and other combinations
6	Analysis of Actual & Design parameters to suggest steps for improving energy intensity of cold storage plants
7	Study & Analysis of Propeller, Axial Turbine and Axial Compressor
8	Reduction of corrosion on machine part processed by blackening process
9	Singularity Analysis in 3D of freedom in planner mechanism
10	Design & Analysis of Gear Box
11	Pulley fatigue Analysis & Optimization
12	Design of fixture for thrust housing
13	Design and Fabrication of 3-Directional Hydraulic modern trailer
14	Design & analysis of pressure vessel
15	Analysis of Machining Process using FEA
16	Investigation of crack orientation effect on properties of a flat plate
17	Effects of various machining parameters on chip interface temperature & roughness
18	Implementation & Validation of six-sigma principle in precision plastic making cell cap
19	Setup time reduction for submerged Arc welding & standardization
20	Design & Fabrication of a pneumatic punching machine for sheet metals

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**AY-2012-13, Semester 2, Project Titles**

Group. No	Project Title
1	Design and Fabrication of Dual Axis Solar Tracker
2	Ejector based refrigeration and air condition system
3	Pick and Place robotic arm using radio frequency module
4	Forced Convection solar dryer
5	To Design and Fabricate the cook stove and to check performance for the various renewable fuels
6	To design and develop a model for pumping of water using mill operated by bellow
7	Design and Structural Analysis of nozzles of Surged air vessel
8	Analysis of Composite Laminated Plate under buckling & Combined Loading
9	Singularity Analysis in 3-D of freedom in planner mechanism
10	Development of Fixture for Bi-Directional Tensile Loading
11	FE Simulation of Orthogonal Cutting
12	Determination of work flow for the improving productivity of worm shaft & gear wheel
13	Effect of Varying Magnetic Field on tool life and surface finish of MS in turning operation
14	Optimum Design & Analysis of a composite Propeller Shaft for an Automobile
15	To Develop Methodology for FLD
16	Investigation on effect of crack length and crack orientation on a strength of flat plate with different central hole geometries
17	Analysis of Machining parameters on chip tool interface temperature and surface roughness
18	A Methodology for o/p scheduling & Lead time reduction in manufacturing of Planetry gear box
19	Fabrication and Determination Efficiency of solar Parabolic Collector
20	Manufacturing & Analysis of Mechanical Seal of Centrifugal Pump
21	Water conservation using water distribution system

**A D PATEL INSTITUTE OF TECHNOLOGY**  
**MECHANICAL ENGINEERING DEPARTMENT**  
**AY-2013-14, Semester 1, Project Titles**

Group. No	Project Title
1	Designing active yaw control system for horizontal axis wind mill
2	Study of thermal history in sand casting
3	Designing assembly and manufacturing of quadrotor
4	Analysis of heat sink for an electronic chip and its optimization
5	Kinematic and dynamic analysis of 3RRR planar parallel manipulator (PPM) using simulink
6	Design and rating analysis of condenser at milk processing unit
7	static load analysis of a preloaded reciprocating ball screw
8	Fibre glass piping system design for buried pipe, thrust restraints, above ground pipe design and installation and joining system
9	Design of material handling system for transportation of material or job from furnace to screw press machine
10	Solar vapour adsorption refrigeration
11	To develop a model of pyramid solar still and compare its performance with double slope solar still
12	Walk assistance device
13	Study and design of plate heat exchanger, spiral H.X., Scraped surface heat exchanger
14	Mechanics of ornithopter
15	Design conceptualization of test rig for bi-axial loading
16	Bicycle power water bellows pump
17	To study the effect of process parameters on weld quality in FSW
18	Troubleshooting in gas fired water heater
19	Error compensation at the joint of serial manipulator due to joint errors
20	Design and fatigue analysis of steel leaf spring
21	Optimization of process variables in hardening process: A Taguchi study with experimental investigation on 34CrNiMo6 and 42CrMo4
22	Analysis and fabrication of peristaltic pump
23	Failure analysis of propeller shaft of self-loading transit mixture machine (MST-4)
24	Design of hydrokinetic electric power generation system by oscillating hydrofoils
25	Design and fabrication of abrasive jet machine for cutting application

26	Effect of process parameters on the welded joints resistance spot welding process
27	Design of fixture for gear housing
28	Design related works of gas fire steam boiler as per the requirement of company
29	Analysis and development of linde hompson liquification system for liquification of air
30	Study of process parameters of EDM
31	Development and analysis of small water areator system through wind energy
32	To improve efficiency of refrigeration plant by analysis
33	To design and manufacturing of flange bending machine
34	To develop inverted absorber type solar still
35	Effect of varying process parameters on surface roughness in abrasive waterjet machine
36	Evaluation of alternatives to reduce thickness of mild steel strip
37	Prevent oil leakage in assesbly of gear box
38	Press tool, jig and fixture desing for center opening cover
39	Studting effect of process parameters in gear profile grinding
40	Studies on effect of quenching media parameters in heat treatment of steel
41	Studying effect of process parameters on geometric tolerance in CNC turning
42	Experimental analysis on solar cookers
43	Company plant layout for rotex automation Pvt. Ltd.
44	Reducing porosities in job order foundry

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**AY-2013-14, Semester 2, Project Titles**

Group. No	Project Title
1	Designing active yaw control system for horizontal axis wind mill.
2	Study of thermal history in Sand Casting.
3	Design, Analysis and Manufacturing of a Quadrotor.
4	Analysis of Heat Sink for cooling of an Electronic chip
5	Kinematic and Dynamic analysis of 3 RRR planner parallel manipulator (PPM) using simulink.
6	Piezoelectricity driven thermoacoustic refrigerator.
7	Static load analysis of a preloaded reciprocating ball screw.
8	Design optimization of Winglets for wing turbine rotor blades.
9	Improvement in performance of gas burner using blower.
10	Solar vapour adsorption refrigeration.
11	Productivity Improvement through elimination of losses at power build limited.
12	Element suitability analysis for 2D structural problems in FEM.
13	Optimization of tool geometry for turning, facing and boring operation.
14	Mechanism of Ornithopter.
15	Design conceptualization of test rig for bi-axial loading.
16	Bicycle powered water bellows pump.
17	To study the effect of Process parameters on Weld Quality in FSW.
18	Process parameter optimization of Diamond burnish process.
19	Studying the effect of constituents on mould properties in sand casting
20	Development of experimental set up for powder metallurgy component.
21	Design and fabrication of gravity bolt feeder.
22	Solution of casting defect by improving gate design
23	CFD Analysis of moderator and surface of calandria of nuclear reactor.
24	Design of hydrokinetic electric power generation system by oscillating hydrofoils.
25	Fabrication of water heater using solar parabolic collector.
26	Effect of process parameters on the welded joints of resistance spot welding process.

27	Fatigue Analysis of grinding jib ( casted part, KMD material) during heat treatment process and its solution.
28	Welding distortion in pressure vessel and the effect of welding parameters on weld crack.
29	Analysis of Connecting rod.
30	Designing and Modeling of multispanner for Car
31	To design the wind funnel type structure and its CFD analysis to take the advantage of flowing air around the body of an automatic to generate the electricity.
32	Optimization of surface roughness for end milling process using taguchi method.
33	To design and manufacturing of Flange bending machine.
34	Develop single slope solar still and modify inverted absorber solar still.
35	Design and stress analysis of motorcycle's monosuspension system.
36	Studying the various process parameters of Lapping process.
37	Design and Analysis of Crane Hook.
38	Improvement in the surface finish of Ni-Hard material by studying grinding process parameters.
39	Feasibility study of conducting magneto abrasive finishing on conventional lathe/ milling machine.
40	Production of Biodiesel.
41	Studying effect of Process Parameters on Geometric Tolerances in CNC Turning.
42	Design and Analysis of composite helical spring and comparing it with simple helical spring which is used in Hundai Santro.
43	Design of tilting mechanism for narrow track car.
44	Design modification of dual plate wafer and check valve
45	Fabrication of flate plate solar air heater

**A D PATEL INSTITUTE OF TECHNOLOGY**  
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**AY-2014-15, Semester 1, Project Titles**

Group. No	Project Title
1	Design and construction of bicycle lawn mover.
2	Evaluation of additives on dry sand mold & optimization of casting process parameters by using taguchi method.
3	Effect of nano fluid in heat transfer characteristics of double pipe heat exchanger.
4	Design and manufacturing of loop wheel
5	Performance test and analysis of four stroke diesel engine using cotton seed oil and neat diesel.
6	Study of push rod suspension system
7	Effect of tool design in FSW of dissimilar material
8	Performance analysis of cutting fluids based on surface finish.
9	Development of an indirect evaporative cooling system
10	Design of heat exchanger to reduce viscosity of jatropha and karanja oil.
11	Model making of automated fish feeder
12	Design and fabrication of piezoelectric thermoacoustic refrigerator
13	Design and development of low cost rice transplanting machine
14	Development of a parabolic point solar concentrator
15	Effect of nanofluid in friction factor of pipes and pipe fitting.
16	Wall Climbing robot on smooth surface
17	Vapour Adsorption refrigerator
18	To study and analysis of effect of input parameter on noise and temperature in gear box housing using DOE.
19	Stair climbing wheel chair
20	Parametric study on resistance spot welding process
21	Solving the problem of vibration and taper ovality in grinding machine
22	Design and development of multi agri cutter.
23	Design of Automatic strirrup bending machine.
24	Development and control of shot peening mechanism using industrial controller
25	Effect of the process parameters on the surface roughness by magnetic abrasive grinding process



26	To study the tool wear in magnetic drilling process
27	Analysis and reduction of distroction during heat treatment process of gear wheel and pinion wheel
28	Fatigue analysis of shaft for extruded gear box.
29	To develop and measure frequently response of vibration setup using non-contact type sensor
30	Wear Reduction by reprofiling
31	Solar water heater using CO2
32	Design and development of a turmeric polishing machine energized by human power flywheel motor.
33	To reduce power consumption of induction furnace by reducing heat losses
34	To study the effect of process parameters on cylindricity for turning operation.
35	Thermo-electric generator (emf produce due to peltier effect)
36	Gear less speed reduction
37	Fabrication and experiment of bernouli's theorem appartus.
38	Design and fabrication of movable automobile headlight.
39	Development of sheaves for ship to port crane application to reduce product cost.
40	Case Harding process on spur gear
41	Design and analysis and modification for 150m height of overhead crane for cement Industry
42	Designing an attachment for manufacturing gears on column and knee type horizontal milling machine.
43	Time study to enhance the productivity of worm wheel manufacturing process.
44	Energy and Exergy analysis of Savonius Wind Turbine
45	Fixture design of worm gear box casing
46	Electricity generation through speed breakers.

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**AY-2014-15, Semester 2, Project Titles**

Group. No	Project Title
1	Design and fabrication of vertical milling attachment on lathe.
2	Design and fabrication of contour turning attachment on KENAL Lathe, ADIT Workshop.
3	Experimental performance of charging and discharging characteristic of thermal energy storage.
4	Comparison of single point cutting tool with coated tool in turning process.
5	Design and analysis of two stage helical gear box for sugar mill
6	Study of push rod suspension system
7	Effect of tool design in FSW of dissimilar material
8	System for energy harvesting using piezoelectricity.
9	Study the experimental and analytical modal analysis of crank shaft of TATA ACE.
10	Design of heat exchanger to reduce viscosity of jatropha and karanja oil.
11	Concept development of advance warning environment.
12	Design and fabrication of piezoelectric thermoacoustic refrigerator
13	Optimization of welding parameters in TIG welding using grey relational analysis.
14	Development of a parabolic point solar concentrator
15	Design and development of Magvel wind turbine.
16	Automotive oil filtration and its analysis.
17	Vapour Adsorption refrigerator
18	Design and improvement of gating system of casting for defects reduction
19	Stair climbing wheel chair
20	Parametric study on resistance spot welding process
21	Effect of process parameters on the characteristic of EDM machining process.
22	Design and development of Automatic can crusher.
23	Working model of closed loop speed control system with the help of variable frequency AC motor
24	Development and control of shot peening mechanism using industrial controller
25	Effective development of process layout and plant layout for AAC Plant.
26	Pump as turbine (PAT)

27	Design and manufacturing of coal fired crucible furnace for Al casting.
28	Experimental investigation of activating fluxes in TIG welding.
29	Effect of different design parameters on vortex tube cooling system.
30	Root cause analysis of automobile transmission and braking system components
31	Development of lathe tool dynamometer for cutting force measurement in ADIT workshop.
32	Design and fabrication of hydraulic cylinder liner puller.
33	Design and development of combined pneumatic and electromagnetic brake
34	Comparison of different feed stock of biogas plant
35	Welding of two dissimilar metals by friction welding on lathe.
36	Design & Fabrication of Desiccant dehumidifier system
37	Fabrication of biomass cook stove
38	Design and development of vacuum insulated transfer line.
39	Design of a fixture for the bogie assembly.
40	Fabrication of natural updraft cook stove
41	Design and development of air caster
42	Design and fabrication of true centrifugal casting machine for ADIT workshop
43	Study of thermal induced stress in GMAW process
44	Experimental Investigation of Liquid Flat Plate Collector

