

Problem Solving Learning

Problem solving is the ability to identify, formulate, analyze, and solve complex engineering problems by applying principles of mathematics, science, and engineering. It involves critical thinking, logical reasoning, and the use of appropriate tools and techniques to arrive at efficient, sustainable, and practical solutions. As emphasized by the National Board of Accreditation, students should be capable of breaking down real-world problems, evaluating constraints, and developing innovative approaches that meet technical, societal, and environmental considerations.

Projects 2024-25

Sr.No.	Project Title	Name of project Guide	Category
1	Air Water Purifier	Dr. R. K. Pohane / Dr. R.K.Bhojar	Environmental Engineering / Sustainable Technology.
2	Fabrication of Solar, Wind and Tidal Power Hybrid Generator	Prof. S.M. Pimpalgaonkar	Renewable Energy Systems / Multidisciplinary Engineering.
3	Experimental Analysis of Honeycomb Pad-Based Evaporative Cooling System	Dr. S.V.Borkar	Thermal Engineering / Energy Efficiency.
4	Fabrication of Smart Camphor Sublimation	Prof. S.G.Ghugal	Smart Automation / Applied Chemistry / IoT.

Projects 2023-24

Sr.No.	Project Title	Name of project Guide	Category
1	Fabrication of an automated solar street light system	Dr. R. K. Pohane	Renewable Energy / Automation
2	Power Generation from water pipeline in hydro power generator	Mr. S.M.Pimpalgaonkar	Renewable Energy / Mechanical
3	Design and Fabrication of automation in street light by using LDR	Mr. S.M.Pimpalgaonkar	Society /Environment

4	Development and Analysis of Power Generation From Waste Heat	Mr.S.G.Ghugal	Society /Environment
5	Design and fabrication of unmanned Arial vehicle for emergency medical purpose	Dr.S.P.Daf	Society /Research
6	Design and fabrication of paver block using waste material	Dr.A.D.Anjekar	Society /Environment
7	An autonomous waste segregator robot design and its analysis	Dr.K.D.Ganvir	Society /Environment
8	Optimizing Exergy Analysis through Energy Conservation from Municipal Waste for Sustainable Power Generation	Dr.M.R.Moroliya	Society/ Environment/Research
9	Smart sanitizing robot with medicine transport system for COVID-19	Prof.S.P.Gurwey	Society/ Environment

Interdisciplinary Project : 2023-24

Sr.No.	Project Title	Name of project Guide	Category
1	Development of Fish Farming Monitoring System using IOT	Dr.S.V.Borkar & Dr.S.B.Dhoble	Society/ Environment/Research
2	Design and fabrication of no suspension no differential vehicle - go kart	Dr.A.D.Anjekar & Dr.M.S.Chaudhari	Research/ Innovation
3	Experimental investigation of bamboo cotton stalk fiber sandwich composite material	Dr.R.K.Bhoyar & Dr.A.C.Haldar	Society/ Environment/ Research / Agriculture

List of student projects: 2022-23

Sr.No	Project Title	Name of project Guide	Category
1	Dual Power Generation System using Solar and Wind Energy.	Mr. S.M.Pimpalgaonkar	Environmental/Research
2	Demonstration of 5 Speed Sliding Mesh Gear Box.	Dr. R.K.Pohane	Environmental/Research
3	Intelligent control system for Automated Guided Vehicle for Material Handling	Dr. S.P. Daf	Society / Research

4	Power generation from Waste heat using Thermoelectric generator	Ms. S.P. Gurway	Society / Environmental / Application
5	Fabrication of Multifunction Solar pesticidesprayer with Crop cutter	Mr. S.G. Ghugal	Agriculture / Environmental / Product Development
6	Design and Fabrication of Automatic Fire fighting Robot	Dr. S.P. Daf	Society / Environmental / Product Development
7	Design and Fabrication of Extraction of Bio-Diesel from Waste plastic material	Dr. M.R. Moroliya	Society / Environmental / Agriculture / Product Development
8	Design and Fabrication of Stair Lift Chair	Mr. S.M.Pimpalgaonkar	Society / Research
9	Design and Fabrication of No Suspension No Differential Vehicle- GO KART	Dr. A.D. Anjekar	Research / Technology
10	Design and Fabrication of Honeycomb Biomass Briquettes Making Machine	Mr. R.K. Bhojar	Society / Environmental / Agriculture / Product Design

List of student projects: 2021-22

Sr.No	Project Title	Name of project Guide	Category
1	Modification and Implementation of Fly Ash Brick Manufacturing Machine	Prof. S. M. Pimpalgaonkar	Environment / Product Development
2	Design And Fabrication of Electric Arc Furnace	Prof. S. M. Pimpalgaonkar	Application / Product Development
3	Development of freezing and cold storage System	Dr. R. K. Pohane	Application / Society
4	Experimental Analysis of Air cooling Systemwith condenser and Evaporator	Dr. A. B. Ganorkar	Research / Application
5	Fabrication and Design of Pneumatic Ramp	Dr. A. B. Ganorkar	Application
6	Design And Fabrication of Mechanism for Indian Toilet cleaning System	Prof.S.G.Ghugal	Society / Product Development
7	Fabrication and analysis of Refrigeration system using Microchannel condenser.	Prof.S.V.Borkar	Research / Product Development
8	Fabrication of Multipurpose loadind and unloading Device.	Prof.S.G.Ghugal	Application / Product Development

9	Air Purifier and Humidifier using water as a Filter.	Prof.S.P.Daf	Environment / Society / Application
10	Design of Multi operation Agricultural Device with renewable Source.	Prof. A. D. Anjekar	Environment / Society / Application
11	Generation of Electricity using sprial wind Turbine.	Prof. K. D. Ganvir	Environment / Research
12	Design And Fabrication of Cultivator and sprayer machine oprated by sustanable Energy.	Prof.M.R.Moroliya	Environment / Product Development
13	Power Generation from Gym Equipment.	Prof.S.P.Gurway	Research / Environment
14	Study on Mechanical Behavior of Jute Fibre bond and fibre and Human hair hybrid Sandwich composites.	Prof.R.K.Bhoyar	Research / Environment
15	Design And Fabrication of Evaporator Water Colling.	Prof.S.V.Borkar	Application / Society

Glimpse of Projects





Tutorial

Tutorial sessions are conducted to strengthen students' understanding of core mechanical engineering subjects. These sessions focus on problem-solving, numerical practice, concept clarification, and discussion of important topics beyond regular lectures. Tutorials provide an interactive learning environment where students can address their doubts, improve analytical skills, and enhance their academic performance in alignment with course outcomes.

Assignments

Assignments are regularly given to reinforce classroom learning and encourage independent study among students. They include problem-solving, analytical questions, and application-based tasks related to course topics. Through assignments, students develop deeper conceptual understanding, critical thinking, and the ability to apply engineering principles to practical problems, supporting the attainment of course outcomes.