

Collaborative Learning by designing projects

We as a department of Mechanical Engineering is implementing, “Learning through Design Projects” and that is a key part of our curriculum. This initiative aims to enhance creativity, collaboration and problem-solving skills by engaging students in hands-on and team-based design experiences/learning.

Through these projects, students will develop essential skills such as design thinking, communication, time management and the ability to work effectively in teams. By tackling real-world challenges they will gain practical knowledge and prepare for professional success in their respective fields.

Design group projects help students to develop a variety of valuable skills, both technical and soft skills. Here are some key takeaways:

- Presenting and defending design topics.
- An Ability to absorb constructive criticism.
- Analyzing real-world design challenges.
- Brainstorming innovative solutions.
- Meeting deadlines and prioritizing tasks.
- Balancing responsibilities within a team.
- Managing a project timeline from idea to completion.
- Researching user needs and market trends.
- Creating prototypes and testing ideas.
- Applying design principles (specification, composition, etc.).
- Using design tools (CAD).
- Learning about materials, layouts, or digital interfaces.
- Learning from failures and making improvements.

2023-24

Sr. No	Title of Project	Guide of project	Type of project
1	Improvement in Process Capabilities in Water Treatment Plant	Prof. S. A. Welekar	Design/Product based design
2	Fabrication and Analysis of water extraction from Atmospheric Air	Prof. A. V. Gadge	Design/Product based design
3	Convert Hydraulic Ram into Manual Ram	Prof. S. A. Welekar	Design/Product based design
4	Hydraulic Bending Machine	Prof. A. V. Gadge	Design/Product based design
5	Automatic Peeling Machine	Prof. K. S. Shelke	Design/Product based design
6	Design and development of solar powered water purifier system of rural area	Dr. P. S. Chaudhari	Design/Product based design
7	Development of Power Generation from Waste Heat in Industries using TEG	Dr. C. N. Sakhale	Design/Product based design
8	Design and fabrication of pneumatic operated crane	Dr. V. M. Sonde	Design/Product based design
9	Fabrication of Road Cleaner	Prof. N. N. Bhaiswar	Design/Product based design
10	Eco-Friendly AC	Prof. K. P. Mudafale	Design/Product based design
11	Development of Solar tree	Prof. N. R. Pathare	Design/Product based design
12	Design & Fabrication of Grass Cutting & Collection Robot	Dr. S. R. Ghatole	Design/Product based design
13	Design and Fabrication of paper recycling machine	Prof. K. P. Mudafale	Design/Product based design
14	Development of Hybrid Solar Dryer System	Prof. G. R. Jodh	Design/Product based design
15	Design and Fabrication of Digital Spring Load Testing Machine with Touchscreen Interface	Dr. I. A. Khan	Design/Product based design
16	Solar Floating System with Sun Tracking	Prof. R.S.Tupkar	Design/Product based design
17	Design and development of Quadcopter with Multiple Payload for Pickup and Drop	Dr. S. N. Waghmare	Design/Product based design

2022-23

Sr. No	Title of Project	Guide of project	Type of project
1	Electrically operated hydraulic ram	Prof. S. A. Welekar	Design/Product based design
2	Fabrication and Analysis of Water extraction From Atmospheric Air	Prof. A. V. Gadge	Design/Product based design
3	Finite Element Analysis of Existing & Modified Solar Structure	Prof. A. S. Nilewar	Design/Product based design
4	Establishment of Co-Relation for Universal Desiccant Dryer with Rotating Beds for Green Herbs and Food Item	Dr. C. N. Sakhale	Design/Product based design
5	Design and Fabrication of solar operated Electric Plow.	Dr. V. S. Shende	Design/Product based design
6	Development of Portable Incineration Chamber	Prof. N. N. Bhaiswar	Design/Product based design
7	Design & Fabrication of Electric Vehicle Mileage Booster	Prof. N. N. Bhaiswar	Design/Product based design
8	Design and Development of Powerless Solar Tracking System.	Dr. V. S. Shende	Design/Product based design
9	Development of Experimental Setup of Water	Dr. S. D. Shelare	Design/Product

	Air Cooling System		based design
10	Portable Mango Slicer: An Effortless Machine for Human Being	Prof. S.M. Awatade	Design/Product based design
11	Design Optimization of Nozzle Folding Die	Dr. S. R. Ghatole	Design/Product based design
12	Automation of Spring Load Testing Machine	Dr. I. A. Khan	Design/Product based design
13	Development of Low Cost Thresher Crop Machine	Dr. M. S. Giripunje	Design/Product based design

2021-22

Sr. No	Title of Project	Guide of project	Type of project
1	Design & Fabrication of Semi-Automatic Garbage cleaner Vehicle	Mrs. P.N. Ramteke	Design/Product based design
2	Electromagnetic automatic braking system	Dr. P.S. Chaudhari	Design/Product based design
3	Solar grass cutter	Dr. P.S. Chaudhari	Design/Product based design
4	Design and fabrication of solar powered smart crop cutter	Mr. K.P. Mudafale	Design/Product based design
5	Design And Analysis Of A Combination Tool For End Mill And Reamer	Dr. I.A. Khan	Design/Product based design
6	Design and fabrication of Upper limbed Exoskeleton Arm	Mr. A. V. Gadge	Design/Product based design
7	Fabrication of Battery Agricultural Fertilizer Sprayer Machine	Mr. N.N. Bhaiswar	Design/Product based design
8	Design and fabrication of solar powered portable automatic groundnut sheller machine	Mr. N.N. Bhaiswar	Design/Product based design
9	Design of Electric Motor Operated HTP Sprayer for Long Range of Discharge used in Horticulture and Orchards	Mr. S.D. Shelare	Design/Product based design
10	Design and Implementation of Water Extraction	Mr. N.R. Pathare	Design/Product based design
11	Design and Development of Organic Waste Compost Making Machine	Dr. V.S. Shende	Design/Product based design
12	Design and fabrication of syringe pump	Mr. K. R. Aglawe	Design/Product based design
13	Optimization of V-Belt Base Cutting M/C at PIX Transmission Ltd.	Dr. I.A. Khan	Design/Product based design
14	Design And Fabrication Of Scrap Minimizer Machine For Waste Management In Industry	Dr. I.A. Khan	Design/Product based design
1	Design and Fabrication of Conveyor Belt with Object Sorting	Mr. G.R. Jodh	Design/Product based design
16	Design and Fabrication of Jumping Bike	Dr. C.N. Sakhale	Design/Product based design
17	Air Vehicle Engine	Dr. C.N. Sakhale	Design/Product based design
18	Development of IOT Based Hybrid Helium Drone from Flight-time Enhancement	Dr. S.N. Waghmare	Design/Product based design
19	Development of Solar Powered Shredder Power Machine for Waste Management	Dr. M.S. Giripunje	Design/Product based design
20	Development of an Economical Solar Powered Lawn- Mover	Dr. M.S. Giripunje	Design/Product based design