

### **List of Senior Design Projects (Academic Year 2025)**

1. Design a mixed-mode crack growth analysis: A finite elementbased modelling
2. Transient flow modeling using Ansys Fluent
3. Designing a smart Agricultural Model Powered by Solar Energy and Artificial Intelligence
4. Adapting the operation of workshop machines to 380 volts 3 phase and rehabilitating the machine
5. Design and manufacturing an eco-friendly and efficient Composite using Agricultural Wastes
6. Design and fabrication of disert cooler
7. Designing a SLAM-Powered Mobile Robot for Adaptive Mapping and Navigation
8. Design and modeling of atmospheric water generator (AWG) for humid climatic conditions
9. Harnessing Renewable Energy Through the Design and Implementation of a Modern Hydropower Plant
10. Design and Erosion Analysis of Successive Elbows with Various Orientations Using the CFD Approach
11. Supersonic wind tunnel design and CFD analysis of the Flow
12. Designing and Optimizing a Point Absorber Wave Energy Converter
13. Mechanical Properties of Chopped Fiber-glass with Nanoparticles Reinforced Epoxy Resin
14. Design of a hybrid solar and wind street lighting system to power LEDs on highway lampposts
15. Design and Thermal Analysis of Solar Water Heater
16. Photocatalytic for water purification by using nanoparticles
17. Design of water distribution system
18. Design of Mineral and ore exploration in jazan region using artificial intelligence and machine learning technique
19. Design and implementation of smart irrigation systems supported with electromechanical sensors using solar energy