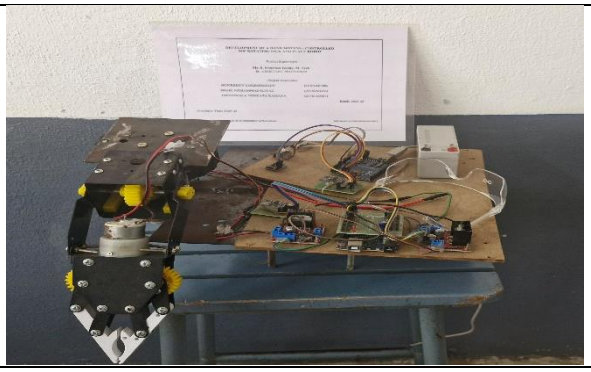
DEPARTMENT OF MECHANICAL ENGINEERING

Details of Products/Prototypes/Models developed

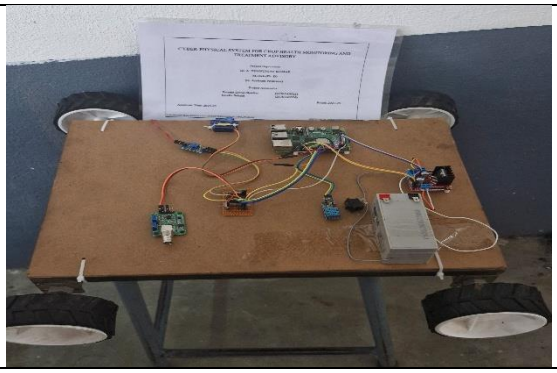
A.Y.: 2024-25

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Design, Analysis and Fabrication of Maglev Wind Turbine using FDM-DMR
Description (in 200 words)	In this project we are work on the Design, analysis and fabrication of MAGLEV wind turbine, in that we are used the magnetic levitation technology in vertical axis wind turbine for minimize the friction and improve the blade rotational efficiency. By using this method, the friction is reduced due to the levitation. The turbine blades are designed using CATIAV5 software and designed the strategic magnet placement for levitation purpose. The CFD analysis is used for analyze the pressure, velocity and temperature. We are used ANSYS workbench 18.1. The turbine blades and base parts are manufactured using 3D printing. And finally, we need to produce electricity by using wind energy with magnetic induction, in this project there is no rotation of shaft so, the wear and tear is also reduced. And it is eco-friendly renewable energy.
Register Number and Name of Students	22765A0320- **P NAGA SAI KUMAR** 22765A0328- **U GOPI** 21761A0309- **D MAHITH**
Photographs	

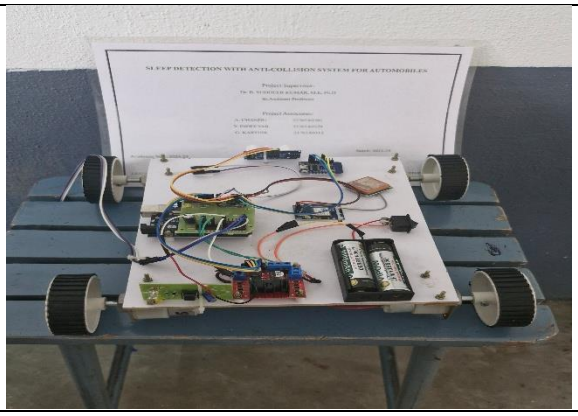
Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Development of a Hand Motion Controlled 360 deg Rotating and Place Robot – SSVR
Description (in 200 words)	The development of a pick-and-place robotic arm with 360-degree rotation, operated using hand gestures, is presented. Robotic arms are essential in industrial automation due to their ability to improve precision, efficiency, and safety, particularly in hazardous environments. This system uses an Arduino Mega 2560 microcontroller to control the robotic arm and implements basic kinematic logic to achieve accurate positioning. Stepper motors are used for the

	actuation of various joints and movements, offering precise control over angular displacement, which is essential for the pick-and-place task. Gesture control is implemented using sensors, allowing users to control the robot intuitively and without the need for traditional programming. The robot is suitable for applications such as sorting, basic assembly, material handling, and assistive technologies. Its gesture-based control enhances accessibility and ease of use, reducing operator effort and improving safety. This project demonstrates a practical and low cost automation solution with future potential for enhancement using AI-based gesture recognition and advanced motion control systems.
Register Number and Name of Students	22765A0308 – GOPIREDDY LOKESH REDDY 22765A0326 - SHAIK MOHAMMAD ILIYAZ 21761A0307- CHENDYALA VENKATA RAMANA
Photographs	

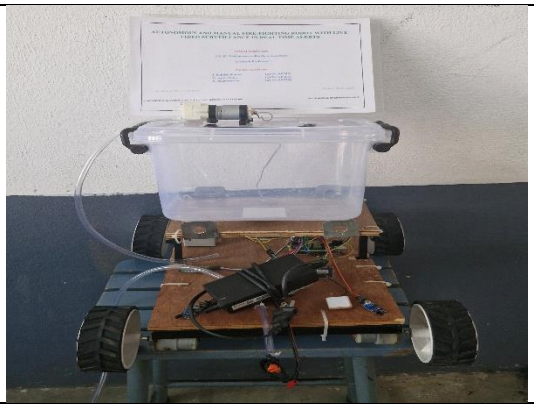
Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Cyber Physical System for Crop Health Monitoring and Treatment Advisory – Dr ADK
Description (in 200 words)	In the pursuit of sustainable and efficient agricultural practices, this project introduces an autonomous agricultural robot embedded within a Cyber-Physical System (CPS) framework. The robot is engineered to perform real-time crop health analysis and provide treatment recommendations by employing a hybrid approach that combines classical image processing techniques with Convolutional Neural Networks (CNNs). Equipped with high-resolution cameras and a suite of sensors, the robot captures visual data of crops, which is initially processed using traditional algorithms such as color space transformations, edge detection, and morphological operations. These methods facilitate the identification of visual symptoms indicative of common plant diseases, including discoloration, lesions, and wilting. To enhance diagnostic accuracy, the system integrates CNNs capable of learning complex patterns and features from the visual data, enabling more precise classification of plant diseases. The CPS architecture ensures seamless integration between the physical components and computational processes, enabling real-time data acquisition, processing, and decision making. Upon detecting potential health issues, the system cross-references the findings with a pre-established database of plant diseases to determine the most probable ailment and suggests appropriate treatment measures. By leveraging both

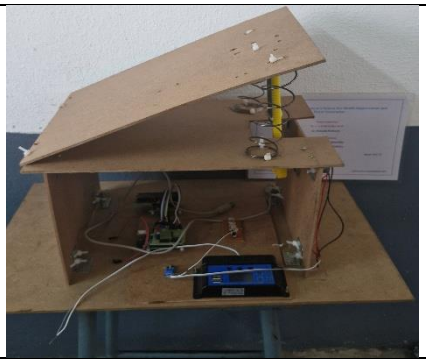
	traditional image processing and CNNs within a CPS framework, this approach offers a robust and efficient solution for crop monitoring, particularly beneficial for regions with limited access to advanced computational resources. The system aims to enhance early disease detection, optimize treatment interventions, and ultimately contribute to improved crop yields and sustainable farming practices.
Register Number and Name of Students	21761A0322- PURAMA DIVYA SANKAR 21761A0324-SARELLA SUKHESH
Photographs	

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Sleep Detection with Anti-Collision System For Automobiles-Dr BSK
Description (in 200 words)	In present world most of the accidents are occurring during nights due to drowsiness while driving, this leading to loss of life and property. This project proposes an advanced driver safety system that integrates an Anti-sleep glass system with an Anti-collision system consisting of an intelligent braking mechanism. This Anti-sleep glass detects the drowsiness of the drivers and triggers the safety measures to avoid the accidents, and This Anti-sleep system is equipped with sensors and algorithms that monitor the driver's eye movements and blink patterns. If signs of drowsiness such as prolonged eye closure or irregular blinking are detected then the system immediately alerts the driver through auditory feedback. Simultaneously the Anti-collision system is designed to respond to critical situations by automatically controlling the wheels if the driver doesn't respond to the alert system feedback. The braking system activates and slow down or stop the vehicle safely when driver is drowsy. the project is aimed at reducing drowsy driving accidents and promoting safe driving environments. It is also aimed to develop a sleep detection system that is effective and also affordable to a middle-class person.

Register Number and Name of Students	22765A0301-A CHANDU 22765A0329-V INDEVEER 21761A0313-G KARTHIK
Photographs	

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Autonomous and Manual Fire fighting Robot With Live Video Survellance in Real Time Alerts – KVR
Description (in 200 words)	Fire-fighting robots are innovative solutions designed to address the challenges and hazards fire-fighters face during emergency operations. This project introduces a fire-fighting robot equipped with both autonomous and manual control modes, enhancing its versatility and effectiveness in varied emergency scenarios. The robot is designed to autonomously detect fire sources, navigate hazardous environments, and actively extinguish fires by deploying a water-sprinkling system. Its dual-mode operation allows it to function independently in areas that are unsafe for human access or can be manually operated by remote controllers in complex environments where precision control is needed. In autonomous mode, the robot utilizes an array of sensors including infrared fire sensors .This sensory suite enables it to map the environment, identify fire hotspots, and maneuver around obstacles to approach the fire. Once in position, the robot activates its water-sprinkling system to extinguish the flames while continuously monitoring the area for residual heat to prevent re-ignition. In manual mode, the robot can be remotely controlled by fire-fighters using a mobile device, providing them with the ability to navigate complex or unfamiliar environments with high accuracy. The manual mode is especially useful in situations requiring detailed, situationally responsive maneuvers that the robot's autonomous algorithms may not anticipate. This dual-mode fire-fighting robot aims to reduce human risk by handling fires in confined or hazardous locations while providing fire-fighters with a reliable and efficient tool to support fire-fighting operations. Through the combination of autonomous and manual functionalities and live video surveiliance and location tracking with a powerful water- sprinkling system, this robot represents a significant advancement in fire-fighting technology, offering a safe, flexible, and effective approach to emergency response.
Register Number and Name of Students	21761A0343 – J SATHISH KUMAR 21761A0362 – V AJITH BABU 21761A0334 – B JAGADEESWAR

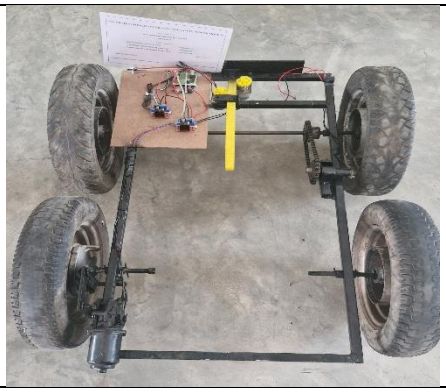
Photographs	

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Design and Development of a System for Health Improvement and Power Generation – Dr ANR
Description (in 200 words)	This study introduces a novel approach that incorporates foot mobility exercises into regular routines to improve worker wellbeing while producing clean, renewable energy. The system has an ergonomic design that is easy to use and integrates IoT-enabled monitoring with mechanical energy harvesting through a dynamo and gear system. Simple foot movements by users transform mechanical energy into electrical energy, which is then stored and utilized to power small appliances like smartphones, LED lights, and Internet of Things devices. Positive results in energy generation and user health, such as enhanced circulation and decreased stress, are shown in preliminary testing. Real-time energy output tracking is made possible by the addition of an IoT module with Wi-Fi, giving users and managers the ability to remotely monitor and optimize usage. Developed for a variety of settings, including homes, workplaces, public locations, and rural regions, this affordable and ecologically friendly solution provides an approachable way to lessen reliance on electricity while encouraging physical activity. In order to support larger renewable energy projects and workplace wellness programs, future improvements will focus on improving energy storage capacities, expanding application areas, and increasing system efficiency.
Register Number and Name of Students	22765A0360- T J N V PRAKASH 22765A0351- N ANIL
Photographs	

Department Name	Mechanical Engineering

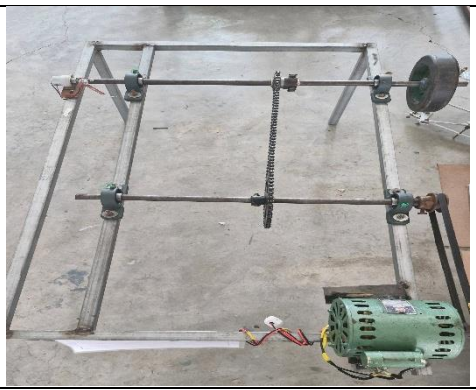
Academic Year	2024-25
Name of the Product	Fabrication of Garbage Collection Rover - KVV
Description (in 200 words)	This project presents the design, fabrication, and development of a garbage collection rover, a robotic system designed to efficiently collect and dispose of waste in urban environments. The rover is equipped with sensors, motors, and a robotic arm, allowing it to navigate through spaces, detect garbage, and collect it. The system is controlled using an Arduino UNO microcontroller and utilizes Bluetooth connectivity for remote monitoring. The garbage collection rover aims to reduce manual labor, increase efficiency, and promote cleanliness in public spaces. This project demonstrates the potential of robotics and automation in waste management, contributing to a more sustainable and environmentally friendly solution.
Register Number and Name of Students	22765A0318- O L K M K PAVAN KUMAR REDDY 21761A0304-Ch. L N SWAMY 22765A0315- M D S AKHILESWAR 22765A0319- O MANJUNADH
Photographs	

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Integrated Intelligent Braking and Safety Bumper Module- Dr PRK
Description (in 200 words)	The main objective of this project is to engineer an innovative braking system with bumper mechanism that can efficiently address the challenges faced by car accidents, such as people death or injuries, property damage, Emotional Trauma and Financial Loss. This Intelligent braking system with bumper mechanism can be used to stop accidents in very short time where it helps to save the lives and the property damage. The discussed systems Iron chassis, Dc 12v motors, ultrasonic sensor, rack and pinon(thermosetting), microcontroller, motor driver, Dc 12v battery (lithium ion), Drum brake wheels, Thermos resistance sheet (wooden sheet), on/off switch, chain mechanism, jumper wire. This Intelligent braking and bumper system can apply brakes automatically when an obstacles like human or vehicles comes across car all of a sudden in same time automatically bumper moves forward to a certain distance to provide safety. Mainly the paper focused on selection of compatible prototype for Intelligent braking system with bumper mechanism which can provide effective result. We are planning to make best mechanism which can push forward the bumper automatically when obstacle appear. we making a prototype by using iron to make the chassis which will be hold the all parts on it. In the car accidents,

	intelligent systems are used for a variety of tasks, which include driver monitoring, automated parking, autonomous driving etc.
Register Number and Name of Students	22765A0311-J PAVAN KUMAR 21761A0333-V CHANDRA SEKHAR 21761A0330-V N RAJ KUMAR
Photographs	

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Design and Fabrication of Savonius Wind Turbine with Omni-Directional Guide Vanes and Solar Power Integration-Dr SRR
Description (in 200 words)	Renewable energy resources are becoming an increasingly important part of our total energy demands due to the depletion of fossil fuels and the emergence of global warming. Wind turbines are one type of renewable resource. It is a fact that wind power is the best dilute and unpredictable source of energy that works with efficiency of great importance in the conversion of this energy to electricity. Production of electricity using wind turbines is completely clean and contribute to global warming. Wind power on the other hand provides an environmentally safe alternative. The use and implementation of wind turbines for power production is steadily growing with the demand for clean power generation. This project tackles the challenge of boosting the efficiency of savonius vertical-axis wind turbines, which despite their rugged design and ability to work in low-wind environments, struggle with low energy conversion rates. By adding omni-directional guide vanes, we aim to channel wind more effectively toward the turbine's curved blades, helping them spin faster and generate more torque. As the blades rotate, their motion is transferred through gears to a DC motor, which acts as a generator. Here's where the magic happens. The spinning motor creates electricity through reverse electromagnetic force (EMF), which is then "stepped up" using transformer to ensure its strong enough to charge batteries. To bridge gaps when the wind isn't blowing, solar panels are integrated into system, converting sunlight into electricity and ensuring a steady power supply. Designed for versatility, this hybrid setup can be installed in places like highways, open fields, or rural areas-locations where consistent energy access is often a challenge. Applications range from powering streetlights to charging everyday devices, offering a lifeline for off-grid communities. Using CATIA software, we're refining the turbine's shape and vane placement to maximize airflow and energy capture. Ultimately, this project isn't just about tweaking a turbine. It about creating a smarter, greener energy solution that pairs wind and solar to deliver reliable power, rain or shine, day or night.

Register Number and Name of Students	22765A0325-R VENKATESWARULU 22765A0327-U VENKATESWARA RAO 21761A0327-T CHAKRAVARTHI
Photographs	

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Fabrication of Self-Sustaining Electricity Generation System Using Flywheel for Electric Vehicle-SSVR
Description (in 200 words)	This project investigates the development of a self-sustaining electricity generation system utilizing flywheel energy storage technology, which captures and converts rotational energy into electrical power. The system is designed to initially rotate the flywheel using an external motor until it reaches optimal rotational speed. At this point, a generator harnesses the stored kinetic energy, converting it into electrical energy that can power various loads or charge batteries, while simultaneously supplying energy to the motor to sustain the flywheel's rotation.
Register Number and Name of Students	21761A0341-G CHAITANYA NAVEEN 21761A0339-G HARI VENKAT 21761A0350- N VIJAYA RAMBABU
Photographs	

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Design And Fabrication of IoT Based Smart Lavatory Integrated with Partition System-DMR
Description (in 200 words)	In our country, the government has introduced a scheme called Swachh Bharat Abhiyan, with one of its key objectives being the maintenance of clean toilets.

	Despite this initiative, the lack of education on proper toilet uses and hygiene remains a significant issue in India. Public washrooms often stay perpetually dirty because users frequently neglect to flush after use, leading to the spread of harmful diseases such as cholera, flu, hepatitis, typhoid, and various bacterial infections. This project leverages hub technology by incorporating odour sensors, ultrasonic sensors, RFID modules, and GSM modules to enhance toilet cleanliness and raise awareness about hygiene. The primary goal is to create a bacteria-free environment in public toilets, thereby reducing the risk of infections. This technology aims to ensure that public restrooms in areas such as airports, universities, colleges, schools, and offices remain clean and odourless, while also addressing the underlying issue of bacterial contamination that increases with usage. By implementing these advanced technological solutions, we are taking a significant step towards achieving a cleaner and healthier environment. This proposal not only aligns with the goals of Swachh Bharat Abhiyan but also attempts to promote the importance of hygiene and cleanliness among the people.
Register Number and Name of Students	22765A0330-A S V N V VARDHAN 22765A0340-K V S YESWANTH KUMAR 21761A0340-G RAJESH KUMAR
Photographs	

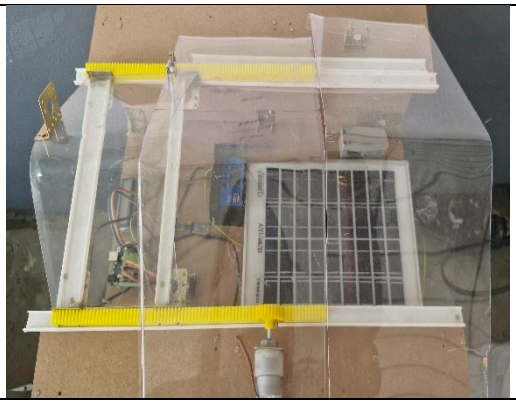
Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Fabrication of Solar Aided Power Generation Using Speed Breaker- Dr SRR
Description (in 200 words)	The Power Generation through Speed Breaker and Solar Panels system is designed to harness renewable energy by converting mechanical and solar energy into electrical energy using Arduino. This project utilizes two key energy sources mechanical energy from vehicles passing over a speed breaker and solar energy captured by photovoltaic panels. The generated electricity is stored in a battery and monitored using a voltage sensor to ensure efficient energy management. When a vehicle moves over the speed breaker, a mechanical mechanism, such as a rack-and-pinion or spring-based setup, converts the kinetic energy into electrical energy using a generator. Simultaneously, solar panels convert sunlight into electrical power, complementing the energy generated by the speed breaker. The electricity produced from both sources is then stored in a rechargeable battery for future use. An Arduino-based system continuously monitors and measures the voltage output from both energy sources using a voltage sensor. The collected data can be displayed on an LCD screen for real-time

	monitoring. This system provides an efficient and sustainable solution for generating electricity, which can be utilized for applications such as streetlights, traffic signals, and charging stations. By integrating mechanical and solar energy sources, this project offers a cost effective, eco-friendly, and reliable alternative to conventional power generation methods. It is particularly useful in urban areas with high vehicular movement, ensuring a continuous and sustainable energy supply while reducing dependency on non-renewable energy sources.
Register Number and Name of Students	22765A0338-G RAVI TEJA 21761A0354-Sk KHAJA MOUINEDDIN 22765A0339-J NAGENDRA NAYAK
Photographs	

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Design and Fabrication of Multi Purpose Sewage Cleaning Robot-VSR
Description (in 200 words)	The objective of this project is to design & fabricate a “Multipurpose Seawage Cleaning Device", which removes waste and oil from water surfaces and disposes them safely from the water bodies. Rivers and waterways serve as lifelines for communities around the world, providing essential resources for drinking, agriculture, and various economic activities. However, these vital ecosystems are increasingly facing the challenge of pollution caused by human activities, such as industrial discharges, agricultural runoff, and improper waste disposal Water is a basic need for all living beings, it is important to maintain the cleanliness and hygiene of water. The development of a prototype for a multipurpose cleaning seawage cleaning device controlled via a mobile application using Bluetooth connectivity. The device, powered by an Arduino Nano microcontroller, responds to commands sent from the mobile app,allowing users to control its movement. The app interface includes buttons for forward, backward, left, and right movements, enabling precise navigation of the device along riverbanks and water bodies for waste collection purposes. The movement commands are executed through a motor driver, specifically the L298N, ensuring smooth and controlled device operation. In addition to movement control, the prototype incorporates another L298N motor driver to operate a conveyor belt mechanism responsible for collecting waste and oil from the river. The conveyor belt system efficiently gathers waste materials encountered during the rover's traversal, depositing them into a collection box located at the end of the belt. This dual-motor setup enhances the rover's functionality, enabling it to actively contribute to environmental conservation

	efforts by facilitating the removal of pollutants, oil and debris from water bodies. Furthermore, the prototype integrates an module, providing real-time visual feedback of the rover's surroundings and operational processes. The captures and transmits video footage to the mobile app, allowing users to monitor the rover's movements and waste and oil collection activities remotely. This feature enhances operational visibility and enables effective decision making, ensuring optimal rover performance and waste removal efficiency in river cleaning initiatives. Overall, the integration of Arduino Nano, motor drivers, in this prototype represents a promising step towards the development of advanced solutions for environmental conservation and river cleaning endeavors.
Register Number and Name of Students	21761A0356-T SATYANARAYANA 22765A0355- S PRASANNA KUMAR 22765A0354-P SUDHEER
Photographs	

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Solar operated Automated Shield Technology for Enhanced Grain Preservation- Dr PRK
Description (in 200 words)	In this project, the work is proposed to present an innovative solar-powered automatic grain cover system designed to protect grains from rain during open-field drying or short-term storage. In many agricultural regions, especially rural areas, grains are commonly sun-dried in open spaces, leaving them vulnerable to unexpected rainfall. This system offers an eco-friendly, intelligent solution to this issue, significantly reducing post-harvest losses and improving food security. The system functions using rain sensors that detect precipitation. When rain is detected, the sensors send a signal to an Arduino microcontroller, which acts as the system's brain. The Arduino then activates a motorized mechanism that swiftly deploys an acrylic cover over the grains, shielding them from water damage. Once the sensors detect dry conditions, the cover automatically retracts, allowing the grains to resume drying in the sun. To enhance user control, the presented project work is integrated with a Bluetooth-enabled mobile application that allows manual operation via smartphone. This feature lets farmers override the automatic system and control the shield remotely based on their judgment or local weather conditions. The entire system is powered by a solar panel, which charges a battery that runs all components — including the Arduino, sensors, motor, and Bluetooth module. This makes the setup fully autonomous, energy-efficient, and ideal for remote or off-grid farms. The battery backup ensures continuous operation even in cloudy weather or at night. This smart grain shielding system marks a significant step forward in farm

	automation. It not only prevents grain spoilage from sudden rain but also reduces the need for manual labour and reliance on weather predictions. By harnessing renewable energy, it supports sustainable farming practices and is scalable for both smallholder and large-scale farms. In summary, the project seamlessly integrates embedded systems, IoT, and solar energy to deliver a practical, cost-effective solution for grain protection. It adds value to harvests, reduces losses, and enhances resilience to climate variability—paving the way for smarter, more sustainable agriculture.
Register Number and Name of Students	22765A0337-G SEKHAR 22765A0335-D ABHILASH REDDY
Photographs	

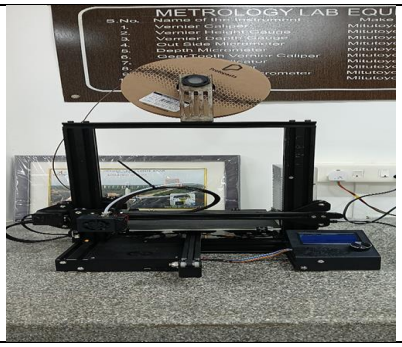
Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Fabrication of Low frequency Vibration Isolation using a Bio-Inspired Cobweb-Zero Stiffness system-JSR
Description (in 200 words)	This study presents a vibration isolation system inspired by the structure of cobwebs. It features a quasi-zero stiffness design, which means it offers very low resistance to motion at low frequencies-ideal for isolating low-frequency vibrations. The cobweb-like structure helps absorb and dissipate energy effectively, resulting in better vibration control than conventional systems. This makes it particularly useful in fields like engineering, aerospace, and infrastructure, where managing low-frequency vibrations is critical. The study proposes a bio-inspired vibration isolation system that mimics the unique mechanical behaviour of spider cobwebs. These natural structures are known for their ability to absorb and dissipate energy efficiently, which helps in minimizing the effects of external vibrations. The system uses a quasi-zero stiffness mechanism, meaning it has very low stiffness near its equilibrium position. This allows it to isolate vibrations more effectively, especially in the low- frequency range, which is often difficult for traditional isolators. Because of its nonlinear structure, the system adapts well to different vibration intensities, providing improved attenuation (reduction in vibration amplitude). Such properties make it highly suitable for sensitive applications in areas like precision engineering, aerospace components, and building structures, where maintaining stability and reducing unwanted vibrations is crucial.
Register Number and Name of Students	21761A0359-T SIVA SAI 22765A0333-B TEJA REDDY 21761A0342-G NISHANTH

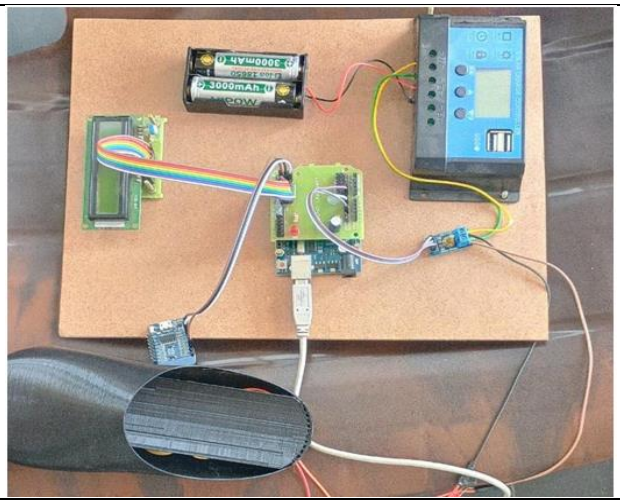
Photographs	

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Fabrication of Electric Unicycle-KLP
Description (in 200 words)	The EV Unicycle is a self-balancing, single-wheeled electric vehicle that can be used for personal urban transportation. It combines an electric motor, battery, and a microcontroller to give balance and motion control. The goal of the project is to create a compact, green vehicle alternative to traditional vehicles to ease traffic congestion and pollution. The bicycle has evolved from being a relic old-intentional recreational item of less polluting proposes that of transport and a small, ultra-light personal quality instrument. In the modern world, the pollution is rising horribly quick and sudden due to the severe use of fuels, due to which air is polluting at a bad speed that leads to a diverse severe disease. and thus, the cost of fossil fuels is also rising day-by-day along with as government policy is also attempting to reduce region pollution in covering. Thus, electrical unicycles are utilized because the pillars that support personal conveyance in huge cities. electrical bicycle may be a bicycle with an associate built-in motor that's utilized for propulsion. It's also referred to as E-bike or booster bike. This bicycle is built up with BLDC motor, controller, reversible batteries, throttle. The technology gives you that extra oomph that you want cover miles of distance without much effort. This project combines core concepts from control engineering, embedded systems, and engineering design to develop a vehicle that is intelligent, user-friendly, and efficient. Its mobility and simple design make it perfect for last-mile connectivity and short-distance travel in crowded urban settings.
Register Number and Name of Students	22765A0317-N PRANEETH 22765A0309-J CHO DURGA RAKESH 20761A0369-M MOHAN PAUL
Photographs	

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Development Of Agricultural Tillage Tool (Cultivator) Through Laser Cladding Of Ni-Based Tungsten Carbide Coatings-Dr KM
Description (in 200 words)	This study explores the enhancement of wear resistance in agricultural cultivator blades through laser cladding using a Nickel-Tungsten Carbide (Ni-WC) composite. The cladding process was conducted under four different laser parameter conditions, varying laser power (1.8–2.4 kW), scanning speed (0.015–0.030 mm/s), and powder feed rate (30–45 g/min). Post-cladding, a multi-level performance evaluation was performed, including visual inspection, dye penetration, and microstructural analysis to assess the clad integrity and defect distribution. Advanced characterization techniques such as microhardness profiling, EDX (Energy Dispersive X-ray Spectroscopy) for elemental mapping, and wear testing under simulated field conditions (Red and Red-Granular Soil) were employed to understand coating durability and performance. Notably, Red-Granular Soil conditions yielded the highest hardness on carbide (2684 HV), especially under optimized laser parameters.
Register Number and Name of Students	22765A0361-T. SRINIVAS 22765A0353- P.CHAITANYA 22765A0362- T.DILIP KUMAR
Photographs	

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Design And Fabrication Of Honey Comb Structure Of Bronze Metal By Diy 3d Printer- KVV
Description (in 200 words)	The project involves modelling, finite element (FE) analysis, fabrication, and experimental analysis of low melting point bronze specimens. Key parameters include melting rate, bead finish, and tool speed. The specimens will be designed using CATIA V5 software, and their FE analysis will be performed in ANSYS. The bronze metal specimens will be manufactured on an FDM metal 3D printer. Experimental structural and metal analysis results will then be compared to the FE analysis for verification.
Register Number and Name of Students	21761A0336-Ch Kalyan Kumar 22765A0334-Ch Durga Kumar 21761A0346-K Bhushaiah

Photographs	

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Harvesting Energy From Footstep Using Pizeoelectric Sensors-Dr Anr
Description (in 200 words)	This project presents a novel energy harvesting system which utilizes piezoelectric sensors embedded in a shoe insole to generate electricity from footsteps. The proposed system aims to provide a sustainable and self-sustaining power solution for wearable devices, reducing the need for battery replacements and recharging. This system consists of a piezoelectric sensor array, a power management circuit,a wearable device interface and Paired with a Bluetooth mobile app, it tracks and displays real-time data: voltage, battery level, footsteps, and calories burned. Experimental results demonstrate the feasibility of the proposed system, showing a significant increase in energy harvesting efficiency compared to existing solutions. This system has the potential to revolutionize the wearable technology industry, enabling the development of autonomous, self-powered wearable devices
Register Number and Name of Students	21761A0311-G SAI CHAITANYA YESHWANTH 21761A0323-R V S GANESH 21761A0317-M SURESH
Photographs	

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	Development Of A Piezoelectric Footwear-Based On Power Harvesting System-SUMR

Description (in 200 words)	The developing worldwide center on renewable energy and conservation has fueled intrigued in harvesting energy from day-by-day human exercises, with piezoelectric sensors rising as a promising strategy for converting mechanical energy from body movement into electrical energy. This project presents the design of an intelligent shoe power generation system that uses piezoelectric sensors implanted inside the shoe sole to convert walking-induced mechanical weight into usable power. The system is designed to optimize sensor arrangement for most extreme energy conversion whereas maintaining user comfort and simplicity. It also investigates the use of strong, flexible, and efficient materials for the harvester and incorporates an energy storage mechanism to power portable electronic gadgets. Reenactment and exploratory testing under various walking conditions evaluate parameters such as power output, conversion efficiency, reaction time, and sensor durability. The results confirm the possibility of utilizing piezoelectric harvesting as a dependable, feasible control source for small wearable electronics, supporting the progression of self-powered gadgets and green energy technologies.
Register Number and Name of Students	22765A0359-T THOSHAN DURGA SAI 21761A0352-R RAMA KRISHNA 21761A0357-Sk GOUSE BASHA
Photographs	

Department Name	Mechanical Engineering
Academic Year	2024-25
Name of the Product	DESIGN & FABRICATION OF TRIFURCATION PIPE FOR THE PREDICTION OF VARIABLE HEAD LOSS & PRESSURE LOSS-BKP
Description (in 200 words)	The branching of pipes in water distribution systems and hydroelectric power plants requires hydraulic analysis to optimize head losses at pipe intersections. This includes predicting inflow at pipe trifurcation using advanced CATIA modeling techniques used to analyze liquid inflow characteristics and thermal performance. The results show significant improvements in stress distribution, inflow consistency, and thermal regulation compared to traditional trifurcation systems. This investigation gives valuable experiences into design principles and viable executions of trifurcation systems, providing a strong foundation for future developments in mechanical designing operations.
Register Number and Name of Students	22765A0310-J BALA SAI 22765A0314-K RAMESH NAIK 21761A0315-K LEELA BHARATH

Photographs