



Development Activities

❖ Product Development

S.N.	Name of Product Developed	Short Description of Developed Product
1	Inner Sole for Footwear	3D printed inner sole for footwear by Reverse Engineering
2	Mobile Stand	Customizable 3D printed mobile stand
3	Holder for Wrist Watch	Customizable 3D printed holder for wrist watch
4	Frame for Face Protection Equipment	3D printed face protection shield
5	Face Mask	Customized face mask with adequate fresh air supply
6	Wrist Band for watch	3D printed Customizable band for wrist watch
7	Multistage VCRS	Design and Fabrication of Multi Stage VCRS.
8	Agro Robot	Design and Development of Robot for Planting Crops for Agriculture.
9	Solar Tracker	Solar Panel with Solar Tracking Device Without extra Power Consumption.
10	Agriculture Support System	To Develop an Innovative System for Agriculture Support in Irrigation, Seed Sowing etc.
11	Fog Disinfecter	Design & Fabrication of Dry Handwashing Machine by Fog Disinfection to Save Water.
12	Charging Point Navigator	Design and Development of a Sharing Charging Model to Address the Location Problem for EV Charging Stations.
13	Air Purity Cabin Guard	Solutions to Detect Air Quality Inside the Cabin and Improve It.
14	Multi-axis Solar Tracker	Fabrication of Multi-axis Solar Tracking System
15	Agro Vehicle	Development of Solar Powered Agro Vehicle

❖ Research laboratories

S.N.	Name of Laboratories Developed	Short Description of Laboratories Developed	Utilization
1	Development of Electro chemical spark machining set up for	ECMSM is a hybrid unconventional machining process which is used for machining of non-conducting	For B.Tech., M.Tech. Project



	machining of non-conducting materials	materials like glass, and modern composite materials.	
2	Development of ECM Set-up and Optimization of Machining Parameters for High Strength Alloy	Electrochemical machining (ECM) is an advanced unconventional machining process for machining of high strength alloys which is not easily machined by conventional machining methods.	For B.Tech., M.Tech. Project

❖ **Instructional materials**

S.N.	Materials	Name of Instructional Materials
1	Lab Manuals	Digital Manufacturing Practices Lab Manual
		Engineering Graphics & Solid Modelling Lab Manual
		Computer Aided Modelling Lab Manual
		Material Testing Lab Manual
		Manufacturing Technology-I Lab Manual
		Fluid Mechanics Lab Manual
		Applied Thermodynamics Lab Manual
		Manufacturing Technology – II Lab Manual
		Theory of Machine Lab Manual
		Heat and Mass Transfer Lab Manual
		Applied Industrial IOT Lab Manual
		Machine Design Lab Manual
		Refrigeration and Air Conditioning Lab Manual
		AI & ML Lab Manual
Model Based System Engineering Lab Manual		
		CAD and Digital Manufacturing Lab Manual
2	PPTs	All Subjects
3	E-learning content	Recorded video lectures of some topics on YouTube platform

4	Lecture Notes	All Subjects
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❖ **Working models/charts/monograms etc.**

S.N.	Models/Charts/Monograms	Specification/Application/Utilization
1	Four bar chain mechanism	The model of a four-bar chain mechanism is used for kinematic analysis, mechanism design, and understanding motion transmission. Its applications in machines, adherence to Grashof's Law, and use in simulation contribute to its significance in mechanical engineering education and practical engineering applications.
2	Single slider crank chain mechanism	The model of a single slider chain mechanism is used for kinematic analysis, mechanism design, and understanding motion transmission to convert rotary motion into linear motion. Widely used in engines, pumps, and other devices. It serves as a fundamental building block for designing and analyzing complex mechanical systems. Its significance lies in its applications and contributions to kinematic and dynamic analyses in engineering.