



Sustainable Development Goal

SDG Number & Title	Target Program Outcomes (POs)	Core Technical Engineering Domains	Practical Project Paradigms & Laboratory Applications
SDG 1: No Poverty	PO6: The Engineer and The World PO9: Communication PO10: Project Management and Finance	Engineering Economics, Low-Cost Automation, Rural Infrastructure	Low-cost agricultural automation, micro-enterprise support platforms, rural utility infrastructure.
SDG 2: Zero Hunger	PO1: Engineering Knowledge PO2: Problem Analysis PO3: Design/Development of Solutions PO6: The Engineer and The World	Smart Agritech, IoT Sensors, Automated Systems	Precision farming sensor networks, automated soil nutrient diagnostic kits, smart storage monitors.
SDG 3: Good Health & Well-Being	PO1: Engineering Knowledge PO3: Design/Development of Solutions PO6: The Engineer and The World PO7: Ethics	Biomedical Instrumentation, Signal Processing, AI	Wearable physiological monitoring nodes, non-invasive diagnostic algorithms, telemedicine hardware.
SDG 4: Quality Education	PO7: Ethics	ICT Tools, Open-Source Platforms,	Remote virtual laboratory setups,



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SDG Number & Title	Target Program Outcomes (POs)	Core Technical Engineering Domains	Practical Project Paradigms & Laboratory Applications
	PO8: Individual and Collaborative Team work PO10: Project Management and Finance PO11: Life-Long Learning	Interactive Pedagogy	open-access educational software, interactive technical learning tools.
SDG 5: Gender Equality	PO6: The Engineer and The World PO7: Ethics PO8: Individual and Collaborative Team work	Inclusive Ergonomic Design, Technology Accessibility	Ergonomic workplace technology, accessible software interfaces, inclusive field equipment.
SDG 6: Clean Water & Sanitation	PO2: Problem Analysis PO3: Design/Development of Solutions PO6: The Engineer and The World	Environmental Telemetry, Microcontrollers, Hydraulics	Automated water quality monitoring, smart greywater recycling systems, heavy metal sensors.
SDG 7: Affordable & Clean Energy	PO1: Engineering Knowledge PO2: Problem Analysis PO3: Design/Development	Renewable Energy, Power Electronics, Low-Power VLSI	Solar PV microgrid controllers, energy-harvesting IoT nodes, maximum power point tracking systems.



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	of Solutions PO6: The Engineer and The World		
SDG 8: Decent Work & Economic Growth	PO6: The Engineer and The World PO7: Ethics PO9: Communication PO10: Project Management and Finance	Industrial Automation, Embedded Systems, Robotics	Safe human-robot interaction systems, industrial safety automation, skill-building incubation tools.
SDG 9: Industry, Innovation & Infrastructure	PO1: Engineering Knowledge PO3: Design/Development of Solutions PO5: Engineering Tool Usage PO6: The Engineer and The World	5G/6G Networks, VLSI Architecture, Edge Computing	High-speed wireless links, robust industrial IoT gateways, automated structural fault detection.
SDG 10: Reduced Inequalities	PO3: Design/Development of Solutions PO6: The Engineer and The World PO7: Ethics	Assistive Technology, Universal UI/UX, Edge Systems	Text-to-speech visual impairment navigation aids, haptic feedback tools, low-cost rural computing units.



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SDG 11: Sustainable Cities & Communities	PO3: Design/Development of Solutions PO6: The Engineer and The World PO9: Communication	Smart Grids, Intelligent Transport, Environmental Mesh	Smart streetlighting mesh networks, ambient air quality monitors, automated waste collection routing.
SDG 12: Responsible Consumption & Production	PO3: Design/Development of Solutions PO6: The Engineer and The World PO7: Ethics	E-Waste Mitigation, Circular Engineering, Green Tech	Lead-free PCB prototyping, eco-friendly product lifecycle modeling, hardware power reduction protocols.
SDG 13: Climate Action	PO2: Problem Analysis PO3: Design/Development of Solutions PO6: The Engineer and The World	Environmental Telemetry, Remote Sensing, Machine Learning	Early warning weather stations, carbon emissions tracking nodes, automated forest canopy analyzers.
SDG 14: Life Below Water	PO2: Problem Analysis PO3: Design/Development of Solutions PO6: The Engineer	Acoustic Sensor Networks, Marine Robotics, Telemetry	Autonomous underwater vehicle sensor payloads, marine salinity and micro-plastic telemetry.



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	and The World		
SDG 15: Life on Land	PO2: Problem Analysis PO3: Design/Development of Solutions PO6: The Engineer and The World	Bio-acoustics, Drone Payload Systems, GIS Mapping	Forest fire early detection mesh networks, acoustic illegal-logging monitors, wildlife protection drones.
SDG 16: Peace, Justice & Strong Institutions	PO6: The Engineer and The World PO7: Ethics PO9: Communication	Cybersecurity, Cryptography, Ethical AI Systems	Transparent blockchain voting architectures, tamper-proof academic verification, privacy-preserving AI.
SDG 17: Partnerships for the Goals	PO8: Individual and Collaborative Team work PO9: Communication PO10: Project Management and Finance PO11: Life-Long Learning	Multi-Disciplinary Projects, Industry MoUs, Open Source	Collaborative industry research projects, inter-institutional consortia, community outreach initiatives.