



KCG
COLLEGE OF TECHNOLOGY
AFFILIATED TO ANNA UNIVERSITY | AUTONOMOUS

B.E. MECHATRONICS ENGINEERING CURRICULUM

CHOICE BASED CREDIT SYSTEM (CBCS)

CORE KNOWLEDGE • DOMAIN EXPERTISE • FUTURE READY

1



ADVANCED MANUFACTURING & DESIGN

- Advanced Machine Design
- Robot Mechanisms & Linkages
- CAD/CAM / CAE
- Sustainable manufacturing
- Laser Processing
- Product Design

2



ELECTRIC VEHICLES & AUTOMOTIVE

- EV Technology
- Battery Management Systems
- Automotive Mechatronics
- ADAS
- Autonomous Vehicles
- Hydrogen Fuel Cells

3



ROBOTICS & AUTONOMOUS SYSTEMS

- Mobile Robotics & SLAM
- Cobots
- Medical/Surgical Robots
- Robot Operating System (ROS)
- Soft Robotics

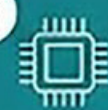
4



ARTIFICIAL INTELLIGENCE & DATA SCIENCE

- Deep Learning
- AI for Predictive Maintenance
- Big Data Analytics
- Reinforcement Learning
- Generative AI & LLMs

5



EMBEDDED SYSTEMS, IOT & CPS

- Digital VLSI
- FPGA
- Cyber-Physical Systems (CPS)
- RTOS
- Industrial Cybersecurity
- IoT Cloud Architecture

6



AEROSPACE & DEFENCE SYSTEMS

- Avionics
- GNC Systems
- Unmanned Aerial Vehicles (UAVs)
- Satellite Communication
- Mission Planning
- Advanced Aerospace Materials

7



INDUSTRIAL AUTOMATION & PROCESS CONTROL

- Industrial Drives
- Motion Control
- PLC, SCADA
- HMI Design
- Distributed Control Systems (DCS)
- Machine Vision

8



SIMULATION & COMPUTATIONAL ENGINEERING

- Finite Element Analysis (FEA)
- Computational Fluid Dynamics (CFD)
- Multibody Dynamics
- Optimization
- Numerical Methods

9



INDUSTRIAL ENGINEERING & MANAGEMENT

- Operations Research
- Supply Chain Management
- Project Management
- Quality Engineering
- Engineering Economics

10



EMBEDDED INTERDISCIPLINARY DOMAINS

- Industry 5.0
- Smart Factories & IoT
- AR/VR in Engineering
- Sustainable/Green Manufacturing

SUPPORTING CORE AREAS ACROSS ALL DOMAINS



Mathematics



Physics



Chemistry



Python
Programming



Engineering
Design



Fluid Power



Sensors &
Measurements



Control
Systems

CREDIT DISTRIBUTION SUMMARY (160 TOTAL)

- Foundation (HSMC, BSC, ESC) - 58 credits (35.0%)
- Professional Core (PCC) - 58 credits (36.3%)
- Electives & Projects (PEC, OEC, SEC, PW) - 46 credits (28.7%)
- Mandatory Audit Courses - 0 credits

OUTCOME:

- Innovation & Research
- Professional Prudence
- Entrepreneurship & Employability

Empower Dreams, Engineer Realities

LEARN • INNOVATE • EXCEL • LEAD