AOU Mechatronics & Robotics — Student Handbook

B.Eng. · Industrial Automation & Robotics Systems pathways · COREN · Draft

AKPAKIP ORO UNIVERSITY (AOU)
Faculty of Engineering — Department of Mechatronics and Robotics Engineering
STUDENTS' HANDBOOK (Draft)
Mechatronics and Robotics Engineering

1. Welcome
This handbook explains the Mechatronics and Robotics Engineering programme: what you will study, how you will be assessed, and where to get help.

2. About the Programme
The programme trains engineers who combine mechanical, electrical, control and software systems to build automated machines and robots. Years 1–2 build foundations; Years 3–5 add pathway specialisation, culminating in an integrated design project and defence.

Graduate profile
• Integrate mechanical, electrical, control and software subsystems.
• Design and program automation systems and robots to applicable safety standards.
• Model, simulate and tune control systems.
• Work ethically and communicate effectively in multidisciplinary teams.
• Consider safety, sustainability and the human impact of automation.

Professional registration: COREN pathway. Keep SIWES records and project reports.

3. Programme Structure (5 years / 10 semesters · ~207 units)
Two pathways:
• Industrial Automation (IA) — production and process systems, PLCs, SCADA, IIoT
• Robotics Systems (RS) — robot design, kinematics/dynamics, control, mobile & industrial robotics

Year 1 — Engineering Foundations
Year 2 — Core Engineering (mechanics, circuits, digital logic, microcontrollers, signals)
Year 3 — Specialist Foundations (Control Systems, Sensors, PLCs / Robot Kinematics, SCADA, Embedded)
Year 4 — Advanced Design + SIWES (Industrial Robotics, Robot Control, Machine Vision, AI for Robotics, Mobile Robotics, IIoT)
Year 5 — Specialisation, Integration & Final-Year Design Project and Defence

Key courses: MRE 301/309 Control Systems · MRE 303 Industrial Automation & PLCs · MRE 306/312 Robot Fundamentals/Dynamics · MRE 402 Industrial Robotics · MRE 409 AI for Robotics · MRE 515 Final-Year Design Project

Draft for Faculty approval. Codes/units provisional pending NUC CCMAS reconciliation.
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