

UNIVERSITY OF ILORIN
FACULTY OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

Engineering Knowledge: WA1

- Apply mathematics to solve complex engineering problems.
- Use natural science principles for engineering solutions.
- Implement computing fundamentals in engineering.
- Utilize engineering fundamentals and specialization knowledge for complex issues.

Problem Analysis: WA2

- Identify and formulate complex engineering problems.
- Research literature and analyze issues.
- Reach substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- Consider holistic approaches for sustainable development.

Design/Development of Solutions: WA3

- Design creative solutions for complex engineering problems.
- Design systems, components, or processes to meet identified needs.
- Consider public health and safety.
- Account for whole-life cost and net-zero carbon.
- Incorporate resource, cultural, societal, and environmental considerations.

Investigation: WA4

- Investigate complex engineering problems.
- Use research-based knowledge and methods.
- Design and conduct experiments.
- Analyze and interpret data.
- Synthesize information for valid conclusions.

Modern Tool Usage: WA5

- Create and select appropriate techniques and tools.
- Apply modern engineering and IT tools.
- Recognize limitations of techniques and resources.
- Use prediction and modeling for complex engineering problems.

The Engineer and Society: WA6

- Analyze and evaluate sustainable development impacts.
- Consider effects on society and the economy.
- Assess sustainability and health and safety.
- Review legal frameworks and environmental impacts.

Ethics: WA7

- Apply ethical principles in engineering.
- Commit to professional ethics and norms.
- Adhere to national and international laws.
- Understand the need for diversity and inclusion.

Individual and Team Work: WA8

- Function effectively as an individual and team member.
- Lead or contribute to diverse and inclusive teams.
- Operate in multi-disciplinary, face-to-face, remote, and distributed settings.

Communication: WA9

- Communicate effectively on complex engineering activities.
- Write effective reports and design documentation.
- Make impactful presentations.
- Consider cultural, language, and learning differences.

Project Management: WA10

- Apply engineering management principles and economic decision-making.
- Use this knowledge in individual work and team roles.
- Manage projects in multi-disciplinary environments.

Lifelong Learning: WA11

- Recognize the need for independent and life-long learning.
- Prepare for and adapt to new and emerging technologies.
- Apply critical thinking in the context of technological change.