

	PROGRAMME LEARNING OUTCOMES (PLO) HANDBOOK Civil Engineering Programme	Ref.: A1 Version: 01 Effective: 01/09/2024
---	--	---

Programme Learning Outcomes (PLO) Handbook

National Engineering Diploma in Civil Engineering

Institution	École Supérieure des Sciences Appliquées et de la Technologie Privée de Gabès (ESSAT Gabès)
Programme	Génie Civil / Civil Engineering
Award	Diplôme d'Ingénieur en Génie Civil / Engineering Diploma in Civil Engineering
Qualification level	EQF Level 7 (Master level)
Mode and duration	Full-time, 6 semesters
Credits	180 ECTS

1. Purpose and Public Accessibility

This document publishes the intended Programme Learning Outcomes (PLOs) of the Civil Engineering programme at ESSAT Gabès. The PLOs define the qualification profile expected of graduates and provide a transparent reference for students, prospective students, employers, academic partners and other stakeholders. They also serve as the reference framework for curriculum design, module alignment, assessment and periodic programme review.

Public URL: <https://www.essat-gabes.com/wp-content/uploads/2026/04/Civil-Engineering-PLO-Handbook.pdf>

2. Educational Objectives

PLO Area	General Objective	Specific Objective
Knowledge and Understanding	Strong foundation in core civil engineering disciplines	Advanced expertise in areas such as structural analysis, geotechnics and hydraulics.
Research, Analysis and Application	Critical thinking and problem-solving	Development and assessment of innovative engineering solutions.
Practical and Methodological Skills	Hands-on experience with tools and techniques	Testing, refining and validating advanced engineering methods.

Personal and Social Skills	Teamwork and communication	Effective collaboration in multidisciplinary and multicultural teams.
Sustainability and Interdisciplinary Integration	Holistic engineering practice	Sustainable and interdisciplinary solutions considering environmental, social and economic dimensions.
Leadership and Guidance	Project management and leadership	Guiding teams and communicating complex engineering solutions to stakeholders.

3. Programme Learning Outcomes (PLOs)

1. Knowledge and Understanding

- **1.1 Deep Expertise in Civil Engineering:** Graduates will independently develop and apply ideas based on a broad and detailed understanding of one or more specialised areas of civil engineering, such as structural analysis, geotechnics and hydraulics.
- **1.2 Scientific Approach to Problem-Solving:** Graduates will identify distinctive aspects of engineering tasks and address them using scientifically grounded methods in order to develop informed and innovative solutions.

2. Research, Analysis and Application

- **2.1 Critical Thinking and Decision-Making:** Graduates will critically evaluate assumptions, integrate new and existing knowledge in complex contexts, and make scientifically informed decisions with practical relevance.
- **2.2 Innovative Engineering Solutions:** Graduates will develop and assess methods for verification and prediction in areas such as structural stability, energy efficiency, flood protection and water resource management.
- **2.3 Project Management and Execution:** Graduates will independently analyse, design and manage complex civil engineering projects, including infrastructure, urban development and construction processes.

3. Practical and Methodological Skills

- **3.1 Quality Management and Process Evaluation:** Graduates will contribute to the design and implementation of quality management approaches and critically evaluate engineering processes using appropriate scientific methodologies.
- **3.2 Advanced Methodologies:** Graduates will test, refine and validate engineering tools and techniques in order to develop robust responses to complex industry challenges.

4. Personal and Social Skills

- **4.1 Interdisciplinary Teamwork:** Graduates will demonstrate teamwork, communication and intercultural competences required for multidisciplinary and multicultural engineering projects.

- **4.2 Innovative Problem-Solving:** Graduates will abstract, analyse and organise complex information and use it to devise creative and effective solutions to engineering challenges.

5. Sustainability and Interdisciplinary Integration

- **5.1 Sustainable Engineering Practices:** Graduates will adopt a holistic and interdisciplinary approach to engineering projects, integrating sustainability principles and environmental, social and economic considerations.

6. Leadership and Guidance

- **6.1 Expert Guidance in Engineering:** Graduates will provide leadership and professional guidance in the analysis and solution of innovative, complex or atypical engineering problems.
- **6.2 Communication and Presentation Skills:** Graduates will present complex engineering solutions effectively to stakeholders and third parties, ensuring clarity and professional impact.

4. Use of the PLOs in Programme Management

- The PLOs are mapped to the curriculum through the objective-module matrix and are translated into module-level Course Learning Outcomes (CLOs).
- Teaching, learning and assessment methods are selected to support the progressive achievement of the PLOs across the six semesters.
- Achievement of the PLOs is monitored through examinations, projects, laboratory work, internships, the End-of-Studies Project, student feedback and programme review activities.
- The PLOs are periodically reviewed within ESSAT's quality management system and may be updated in response to academic, professional, regulatory and stakeholder feedback.

5. Publication and Stakeholder Access

ESSAT commits to making the Programme Learning Outcomes publicly accessible. The PLOs shall be available on the Civil Engineering programme webpage together with the programme overview and relevant academic documentation. The public version is intended to enable prospective students, current students, employers and academic partners to understand the competence profile associated with the Engineering Diploma in Civil Engineering.

6. Publication Evidence

Programme webpage	https://www.essat-gabes.com/genie-civil/
PLO Handbook / public PDF	https://www.essat-gabes.com/wp-content/uploads/2026/04/Civil-Engineering-PLO-Handbook.pdf
Date of publication	2025
Responsible unit	Civil Engineering Department / Quality Management
Screenshot / evidence file	A1_Website_Publication_Evidence.pdf

7. Approval

Approved by	Mr Abdallah Zrelli, Director of ESSAT
Effective date	1 September 2024
Signature	Signed by the Director
Institutional stamp	

8. Related Documents

- PLO Handbook – Civil Engineering
- Appendix 4 – Study Plan
- Appendix 5 – Module Descriptions / Module Handbook
- SSC-based Objective–Module Matrix
- Diploma Supplement
- Civil Engineering Programme Webpage