ESSAT
Ecole Supérieure Des Sciences Appliquées et de la Technologie Privée de Gabès

APPENDIX 4

CIVIL ENGINEERING STUDY PLAN

Engineering Diploma in Civil Engineering | ESSAT Gabès

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Signature and institutional stamp:

Le Directeur

Workload convention: 1 ECTS = 25 hours = 15 hours of structured learning + 10 hours of independent work.

Programme total: 6 semesters | 180 ECTS | 4,500 hours of total student workload.

Abbreviations: DW = directed/tutorial work; PW = practical/project work; structured learning = Course + DW + PW.

SEMESTER 1

Teaching unit	Module	Nature	Delivery	Course	DW	PW	Structured	Independent	Total	ECTS	Coeff.	Assessment
T.U.01 Fundamental Sciences for Engineers I	Mathematics I	Fundamental	On-site	15	15	0	30	20	50	2	2	Combined assessment
	Computer Science I	Fundamental	On-site	15	0	15	30	20	50	2	2	Combined assessment
	Numerical Analysis	Fundamental	On-site	15	15	15	45	30	75	3	3	Combined assessment
T.U.02 Fundamentals of Mechanics and Materials	Solid Mechanics	Fundamental	On-site	15	15	0	30	20	50	2	2	Combined assessment
	Construction Materials	Fundamental	On-site	15	15	15	45	30	75	3	3	Combined assessment
	Tutored Project 1-1	Fundamental	Non-presential	0	0	15	15	10	25	1	1	Project-based assessment
T.U.03 Geoenvironmental Engineering and Fluid Mechanics	Engineering Geology and Geophysics	Fundamental	On-site	21	9	0	30	20	50	2	2	Combined assessment
	Hydrology	Fundamental	On-site	30	15	0	45	30	75	3	3	Combined assessment
	Fluid Mechanics	Fundamental	On-site	30	15	0	45	30	75	3	3	Combined assessment
T.U.04 CAD and Instrumentation	Computer-Aided Building Drawing (CABD)	Fundamental	On-site	15	0	15	30	20	50	2	2	Continuous assessment
	Tutored Project 1-2	Fundamental	Non-presential	0	0	15	15	10	25	1	1	Project-based assessment
	Measurement and Instrumentation	Fundamental	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
T.U.05 Human Sciences and Engineering Culture I	Initiation and Introduction to Economics	Transversal	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
	Technical Communication	Transversal	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
	English I	Transversal	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
Semester total				231	129	90	450	300	750	30	30	

1 ECTS = 25 h. Semester total = 30 ECTS = 750 h (450 h structured + 300 h independent).

SEMESTER 2

Teaching unit	Module	Nature	Delivery	Course	DW	PW	Structured	Independent	Total	ECTS	Coeff.	Assessment
T.U.06 Fundamental Sciences for Engineers II	Mathematics II	Fundamental	On-site	15	15	0	30	20	50	2	2	Combined assessment
	Computer Science II	Fundamental	On-site	15	0	15	30	20	50	2	2	Combined assessment
	Numerical Analysis Project	Fundamental	Non-presential	0	0	22,5	22,5	15	37,5	1,5	1,5	Project-based assessment
	Probability and Statistics	Fundamental	On-site	15	15	0	30	20	50	2	2	Combined assessment
T.U.07 Fundamental Principles of Civil Engineering	Strength of Materials	Fundamental	On-site	30	15	15	60	40	100	4	4	Combined assessment
	Soil Mechanics I	Fundamental	On-site	21	15	9	45	30	75	3	3	Combined assessment
	Urban Hydraulics	Fundamental	On-site	15	15	0	30	20	50	2	2	Combined assessment
	Tutored Project 1-3	Fundamental	Non-presential	0	0	22,5	22,5	15	37,5	1,5	1,5	Project-based assessment
T.U.08 Building Physics and Topography	Building Thermal Systems	Fundamental	On-site	15	15	0	30	20	50	2	2	Combined assessment
	Topography	Fundamental	On-site	15	15	15	45	30	75	3	3	Combined assessment
	Building Acoustics	Fundamental	On-site	15	15	0	30	20	50	2	2	Combined assessment
T.U.09 Human Sciences and Engineering Culture II	English II	Transversal	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Continuous assessment
	Site Visits	Transversal	On-site	0	0	30	30	20	50	2	2	Continuous assessment
	Industrial Culture	Transversal	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
Semester total				186	135	129	450	300	750	30	30	

1 ECTS = 25 h. Semester total = 30 ECTS = 750 h (450 h structured + 300 h independent).

SEMESTER 3

Teaching unit	Module	Nature	Delivery	Course	DW	PW	Structured	Independent	Total	ECTS	Coeff.	Assessment
T.U.10 Structural Mechanics and Optimization	Operational Research and Optimization	Fundamental	On-site	15	15	15	45	30	75	3	3	Combined assessment
	Plates and Shells	Fundamental	On-site	15	15	0	30	20	50	2	2	Combined assessment
	Reinforced Concrete I	Fundamental	On-site	30	15	0	45	30	75	3	3	Combined assessment
	Structural Mechanics	Fundamental	On-site	30	15	0	45	30	75	3	3	Combined assessment
	Tutored Project 1-2	Fundamental	Non-presential	0	0	22,5	22,5	15	37,5	1,5	1,5	Project-based assessment
T.U.11 Transportation, Geotechnics and Planning	Design and Calculation of Roads	Fundamental	On-site	15	15	0	30	20	50	2	2	Combined assessment
	Urban Transport Planning	Fundamental	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
	Soil Mechanics II	Fundamental	On-site	21	15	9	45	30	75	3	3	Combined assessment
	Tutored Project 3-2	Fundamental	Non-presential	0	0	22,5	22,5	15	37,5	1,5	1,5	Project-based assessment
T.U.12 Urban Design and Building Technology	Architecture and Urban Planning	Fundamental	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
	Building Equipment and Electricity	Fundamental	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
	Computer Science III	Fundamental	On-site	0	0	30	30	20	50	2	2	Combined assessment
T.U.13 Human Sciences and Engineering Culture III	Occupational Health and Safety Management and Continuous Improvement (ISO 45001:2018)	Transversal	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
	Problem Solving and Decision Making	Transversal	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
	English III	Transversal	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
Semester total				216	135	99	450	300	750	30	30	

1 ECTS = 25 h. Semester total = 30 ECTS = 750 h (450 h structured + 300 h independent).

SEMESTER 4

Teaching unit	Module	Nature	Delivery	Course	DW	PW	Structured	Independent	Total	ECTS	Coeff.	Assessment
T.U.14 Finite Element Analysis of Structures	Analysis of Structures Using Finite Elements	Fundamental	On-site	30	15	0	45	30	75	3	3	Combined assessment
T.U.15 Design of Concrete and Steel Structures	Reinforced Concrete II	Fundamental	On-site	30	15	0	45	30	75	3	3	Combined assessment
	Prestressed Concrete	Fundamental	On-site	30	15	0	45	30	75	3	3	Combined assessment
	Design and Calculation of Steel Structures	Fundamental	On-site	30	15	0	45	30	75	3	3	Combined assessment
T.U.16 Structural Design and Analysis	Design and Calculation of Civil Engineering Structures	Fundamental	On-site	30	15	0	45	30	75	3	3	Combined assessment
	Design and Calculation of Building Structures	Fundamental	On-site	30	15	0	45	30	75	3	3	Combined assessment
T.U.17 Construction Technology and Building Services	General Construction Processes	Fundamental	On-site	15	15	0	30	20	50	2	2	Combined assessment
	Reinforced Concrete Tanks	Fundamental	On-site	9	6	0	15	10	25	1	1	Combined assessment
	Tutored Project 2-2	Fundamental	Non-presential	0	0	15	15	10	25	1	1	Project-based assessment
	Air Conditioning and Heating	Fundamental	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
T.U.18 Capstone Project in Structural Engineering	End-of-Year Project	Fundamental	Non-presential	0	0	15	15	10	25	1	1	Project-based assessment
	ARCHE	Fundamental	On-site	0	0	30	30	20	50	2	2	Continuous assessment
	Revit Structure	Fundamental	On-site	0	0	30	30	20	50	2	2	Continuous assessment
	English IV	Transversal	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
Semester total				234	126	90	450	300	750	30	30	

1 ECTS = 25 h. Semester total = 30 ECTS = 750 h (450 h structured + 300 h independent).

SEMESTER 5

Teaching unit	Module	Nature	Delivery	Course	DW	PW	Structured	Independent	Total	ECTS	Coeff.	Assessment
T.U.19 Civil Engineering Design Offices	Building Design Office for Reinforced Concrete	Fundamental	On-site	15	0	15	30	20	50	2	2	Continuous assessment
	Special Foundations Design Office	Fundamental	On-site	15	0	15	30	20	50	2	2	Continuous assessment
	Road Design Office	Fundamental	On-site	15	0	15	30	20	50	2	2	Continuous assessment
	Metallic Construction Design Office	Fundamental	On-site	15	0	7,5	22,5	15	37,5	1,5	1,5	Continuous assessment
	Design Office for Reinforced Concrete Reservoirs	Fundamental	On-site	15	0	7,5	22,5	15	37,5	1,5	1,5	Continuous assessment
	Design Office for Civil Engineering Structures	Fundamental	On-site	15	0	15	30	20	50	2	2	Continuous assessment
T.U.20 Civil Engineering Construction: Maritime, Management and Safety Aspects	Maritime Works	Fundamental	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
	Organization and Management of Construction Projects	Fundamental	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
	Fire Safety and Fire Resistance of Structures	Fundamental	On-site	9	6	0	15	10	25	1	1	Combined assessment
T.U.21 Structural Performance and Optimization	Building Pathology	Fundamental	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Combined assessment
	Structure Optimization	Fundamental	On-site	15	15	0	30	20	50	2	2	Combined assessment
	Elasto-Plastic Analysis of Structures	Fundamental	On-site	15	15	0	30	20	50	2	2	Combined assessment
	Structural Dynamics	Fundamental	On-site	15	15	0	30	20	50	2	2	Combined assessment
	Tutored Project 4-1	Fundamental	Non-presential	0	0	15	15	10	25	1	1	Project-based assessment
T.U.22 Elective Module and Associated Project	Cartography and GIS	Elective	On-site	15	15	0	30	20	50	2	2	Combined assessment
	Eco-Design	Elective	On-site	15	15	0	30	20	50	2	2	Combined assessment
	Topography and Cartography Option Project	Elective	Non-presential	0	0	15	15	10	25	1	1	Project-based assessment
	Eco-Design Option Project	Elective	Non-presential	0	0	15	15	10	25	1	1	Project-based assessment
T.U.23 Human Sciences and Engineering Culture IV	Preparation for English B2 Certification	Transversal	On-site	15	7,5	0	22,5	15	37,5	1,5	1,5	Continuous assessment
	Labor Law	Transversal	On-site	9	6	0	15	10	25	1	1	Continuous assessment
	Research Methodology	Transversal	On-site	9	6	0	15	10	25	1	1	Continuous assessment
Semester total				237	108	105	450	300	750	30	30	

1 ECTS = 25 h. Semester total = 30 ECTS = 750 h (450 h structured + 300 h independent). Students choose one elective module (Cartography and GIS or Eco-Design) and its associated option project.

SEMESTER 6

Teaching unit	Module	Nature	Delivery	Course	DW	PW	Structured	Independent	Total	ECTS	Coeff.	Assessment
T.U.24 Professional Internships and End-of-Studies Project	Technician Internship	Fundamental	Non-presential	0	0	45	45	30	75	3	3	Internship assessment
	Engineering Internship	Fundamental	Non-presential	0	0	45	45	30	75	3	3	Internship assessment
	End-of-Studies Project	Fundamental	Non-presential	0	0	360	360	240	600	24	24	PFE assessment
Semester total				0	0	450	450	300	750	30	30	

1 ECTS = 25 h. Semester total = 30 ECTS = 750 h (450 h structured + 300 h independent).

Workload convention for professional components: the hours shown for the Technician Internship and the Engineering Internship represent the structured, supervised and assessed academic workload recognised within the programme. The professional placement period may include additional workplace-presence hours required by the host organisation.