



الجامعة الألمانية الأردنية
German Jordanian University

German Jordanian University

**School of Sustainable Systems and
Engineering (SSSE)**

Department of Civil and

Environmental Engineering

Bachelor of Science in Civil and

Environmental Engineering

Specializations

The Department of Civil and Environmental Engineering offers the Bachelor of Science (B.Sc.) degree after successfully passing 180 credit hours. The B.Sc. degree in Civil and Environmental Engineering can be obtained in one of two specializations: Civil Engineering (general) or Civil Engineering (Water and Environmental Engineering).

Degree Requirements

Classification	Credit hours
1. University requirements	27
2. School requirements	43
3. Department Requirements a. Course work at GJU (86 CHs) b. Elective course work in Germany (12 CHs) c. Internship in Germany (12 CHs)	110
Total=	180

List of Courses

Framework for the B.Sc. Degree for the Civil and Environmental Engineering Department

1. University Requirements: (27 Credit Hours)

a. Compulsory: (21 Credit Hours)

Course ID	Course Title	Credit Hours	Lecture	Lab	Pre-requisite
ARB099	Arabic 99 *	0	0	3	-
ARB100	Arabic *	3	3	0	-
ENGL098	English I *	0	0	3	-
ENGL099	English II *	0	0	3	ENGL098
ENGL101	English III *	1	0	3	ENGL099
ENGL102	English IV *	1	0	3	ENGL101
ENGL201	English V *	2	0	3	ENGL102
ENGL202	English VI *	2	0	3	ENGL201
GERL101	German I *	3	0	9	-
GERL102	German II	3	0	9	GERL101
NE101	National Education (in Arabic)	3	3	0	ARB099
	National Education (in English)	3	3	0	ENGL101
MILS100	Military Sciences	3	3	0	Only for Jordanian
Total=		21			

*Student's score on placement test will decide the course level to start from

b. University Electives: (6 Credit Hours)

Course ID	Course Title	Credit Hours	Lecture	Lab	Pre-requisite
DES101	Arts' Appreciation (in Arabic)	3	3	0	ARB099
	Arts' Appreciation (in English)	3	3	0	ENGL101
PE101	Sports and health	3	3	0	ARB099
EI101	Leadership and Emotional Intelligence	3	3	0	ENGL101
IC101	Intercultural Communication	3	3	0	ENGL101
BE302 OR SE 301	Business Entrepreneurship OR Social Entrepreneurship and Enterprises	3 OR 3	3	0	ENGL101
SFTS 101	Soft Skills	3	3	0	ENGL101

2. School Requirements: (43 Credit Hours):

Course ID	Course Title	Credit Hours	Lecture	Lab	Pre-requisite Or Co-requisite(#)
CS116	Computing fundamentals	3	3	0	-
CS1160	Computing fundamentals lab	1	0	3	#CS116
CHEM103	General Chemistry I	3	3	0	-
CHEM106	General Chemistry lab	1	0	3	#CHEM103
MATH101	Calculus I	3	3	0	-
MATH102	Calculus II	3	3	0	MATH101
GERL201	German III	3	0	9	GERL102
GERL202	German IV	3	0	9	GERL201
MATH203	Applied Mathematics for Engineers	3	3	0	MATH102
IE0121	Probability and Statistics for Engineers	3	3	0	MATH101
PHYS103	Physics I	3	3	0	-
PHYS104	Physics II	3	3	0	PHYS103
PHYS106	General Physics Lab	1	0	3	#PHYS104
ME111	Computer Aided Engineering Drawing	3	3	0	CS116
IE121	Workshop	1	0	3	ME111
ENE437	Economics of Natural Resources Engineering	3	3	0	MATH203
MATH205	Differential equations	3	3	0	MATH102
Total=		43			

3. Civil Engineering Track department requirements & study in Germany:
(110 Credit Hours)

a. Compulsory courses: (86 Credit Hours)

Course No.	Course Title	Credit Hours	Weekly Hours		Prerequisite or # Corequisite
			Lecture	Laboratory	
CEE101	General Chemistry II	3	3	0	CHEM103
CEE201	Statics	3	3	0	PHYS103 & MATH101
TME222	Fluid Mechanics	3	3	0	MATH102 & CEE201
TME213	Mechanics of Materials	3	3	0	CEE201
CEE204	Dynamics and Vibration	3	3	0	CEE201
CEE202	Engineering geology	2	2	0	-
CEE203	Engineering Geology lab	1	0	3	CEE202 Or #CEE202
CEE211	Hydrology	3	3	0	IE211
CEE311	Hydraulics	3	3	0	TME222
CEE312	Hydraulics Lab	1	0	3	CEE311 Or #CEE311
CEE321	Structural analysis (1)	3	3	0	TME213
CEE322	Structural analysis (2)	3	3	0	CEE321
CEE331	Surveying	2	2	0	IE211
CEE332	Surveying lab	1	0	3	CEE331 Or #CEE331
CEE333	Highway and traffic engineering	3	3	0	CEE331
CEE341	Geotechnical engineering	3	3	0	CEE202 & TME213
CEE342	Geotechnical engineering lab	1	0	3	CEE341 Or #CEE341
CEE351	Building materials	2	2	0	-
CEE352	Building materials lab	1	0	3	CEE351
GERL301	German V	3	0	9	GERL202
GERL302	German VI	3	3	0	GERL301
CEE323	Reinforced concrete (1)	3	3	0	CEE321 & CEE351
CEE521	Reinforced concrete (2)	3	3	0	CEE323
CEE522	Steel structures	3	3	0	CEE321
CEE541	Foundation engineering	3	3	0	CEE323 & CEE341
CEE515	Water and wastewater Treatment Engineering	3	3	0	CEE311
CEE516	Water and Waste water Treatment Engineering Lab	1	0	3	CEE515 Or #CEE515
CEE511	Environmental engineering	3	3	0	CEE311
CEE531	Transportation engineering	3	3	0	CEE333
CEE532	Pavement design	3	3	0	CEE333

CEE533	Highway Lab	1	0	3	CEE532 Or #CEE532
CEE561	Contracts, Specifications and Quantity Surveying	3	3	0	CEE323 & CEE331
CEE562	Engineering Projects & Construction Management	3	3	0	CEE323 & CEE333
CEE390	Field Training in Jordan	0			
CEE598	Graduation project 1	1			
CEE599	Graduation project 2	3			CEE598

b. International Internship in Germany (12 credit hours)

Course No.	Course Title	Credit Hours	Weekly Hours		Prerequisite or # Corequisite
			Lecture	Laboratory	
CEE372	International Internship in Germany	12	0	0	-

c. Civil Engineering Track elective courses: (12 Credit Hours):

Course No.	Course Title	Credit Hours	Weekly Hours		Prerequisite or # Corequisite
			Lecture	Laboratory	
CEE517	Solid Waste Management	3	3	0	CEE341
CEE514	Water resources Engineering	3	3	0	CEE311 & CEE211
CEE591	Advanced topics in water and environmental engineering	3	3	0	Department Approval
CEE519	Hydraulic Structures	3	3	0	CEE311
CEE520	Rehabilitation of Structures	3	3	0	CEE323
CEE523	Advanced reinforced concrete	3	3	0	CEE322 & CEE323
CEE524	Pre-stressed concrete	3	3	0	CEE322 & CEE323
CEE525	Bridge engineering	3	3	0	CEE322 & CEE323
CEE526	Earthquake Engineering	3	3	0	CEE204, CEE322 & CEE323
CEE425	Timber structures	3	3	0	CEE321
CEE527	Advanced steel structures	3	3	0	CEE522
CEE528	Structural systems	3	3	0	CEE323
CEE429	Advanced topics in Structural engineering	3	3	0	Department Approval
CEE530	Traffic safety and management	3	3	0	CEE333
CEE534	Highway Maintenance and Planning	3	3	0	CEE333
CEE535	Urban Mobility & Public Transportation	3	3	0	CEE333
CEE536	Railway Engineering	3	3	0	CEE333
CEE537	Airport Engineering	3	3	0	CEE333
CEE593	Advanced topics in Transportation engineering	3	3	0	Department Approval
CEE542	Dam Engineering	3	3	0	CEE311, CEE341, & CEE323
CEE543	Geographic Information systems	2	2	0	CS116
CEE544	Geographic Information systems lab	1	0	3	#CEE442
CEE545	Soil Dynamics				CEE341
CEE546	Soil and Rock Exploration				CEE341
CEE594	Advanced topics in geotechnical engineering	3	3	0	Department Approval
CEE550	Computer Application in Civil Engineering				Department Approval
CEE551	Building Construction	3	0	0	CEE351
CEE452	Construction machines	3	0	0	CEE333 & CEE351

CEE553	Building Physics	3	3	0	CEE351
CEE554	Building Information Modeling	3	3	0	CEE323
CEE555	Sustainable Buildings	3	3	0	CEE351
CEE595	Advanced Topics in Construction	3	3	0	CEE351
CEE596	Advanced topics in Project Management	3	3	0	Department Approval
CEE480	Independent Studies	3	3	0	
CEE481	Special topics	1	1	0	
CEE482	Special topics	2	2	0	
CEE483	Special topics	3	3	0	

4. Water and Environmental Track department requirements & study in Germany: (110 Credit Hours):

a. Compulsory courses: (86 Credit Hours)

Course No.	Course Title	Credit Hours	Weekly Hours		Prerequisite or # Corequisite
			Lecture	Laboratory	
CEE101	General Chemistry II	3	3	0	CHEM103
CEE201	Statics	3	3	0	PHYS103 & MATH101
TME222	Fluid Mechanics	3	3	0	MATH102 & CEE201
TME213	Mechanics of Materials	3	3	0	CEE201
CEE204	Dynamics and Vibration	3	3	0	CEE201
CEE202	Engineering geology	2	2	0	-
CEE203	Engineering Geology lab	1	0	3	CEE202 Or #CEE202
CEE311	Hydraulics	3	3	0	TME222
CEE312	Hydraulics Lab	1	0	3	CEE311 Or #CEE311
CEE211	Hydrology	3	3	0	IE211
CEE321	Structural analysis (1)	3	3	0	TME213
CEE331	Surveying	2	2	0	IE211
CEE332	Surveying lab	1	0	3	CEE331 Or #CEE331
CEE333	Highway and traffic engineering	3	3	0	CEE331
CEE341	Geotechnical engineering	3	3	0	CEE202 & TME213
CEE342	Geotechnical engineering lab	1	0	3	CEE341 Or #CEE341
CEE351	Building materials	2	2	0	-
GERL301	German V	3	0	9	GERL202
GERL302	German VI	3	3	0	GERL301
CEE323	Reinforced concrete (1)	3	3	0	CEE321 & CEE351
CEE313	Water Chemistry	2	2	0	CEE101
CEE314	Water Chemistry lab	1	0	3	CEE313 Or #CEE313
CEE315	Environmental Impact Assessment	2	2		
CEE522	Steel structures	3	3	0	CEE321
CEE541	Foundation engineering	3	3	0	CEE323 & CEE341
CEE515	Water and wastewater Treatment Engineering	3	3	0	CEE311
CEE516	Water and Waste water Treatment Engineering Lab	1	0	3	CEE515 Or #CEE515
CEE514	Water resources engineering	3	3	0	CEE311 & CEE211
CEE517	Solid Waste Management	3	3	0	CEE341

CEE512	Air Pollution Control	2	2	0	CEE315
CEE513	Air Pollution Control lab	1	0	3	CEE512 Or #CEE512
CEE532	Pavement design	3	3	0	CEE333
CEE561	Contracts, Specifications and Quantity Surveying	3	3	0	CEE323 & CEE331
CEE562	Engineering Projects & Construction Management	3	3	0	CEE323 & CEE333
CEE390	Field Training in Jordan	0			
CEE598	Graduation project 1	1			
CEE599	Graduation project 2	3			CEE598

b. International Internship in Germany (12 credit hours)

Course No.	Course Title	Credit Hours	Weekly Hours		Prerequisite or # Corequisite
			Lecture	Laboratory	
CEE372	International Internship in Germany	12	0	0	-

c. Water and Environmental Track (elective): (12 Credit Hours):

Course No.	Course Title	Credit Hours	Weekly Hours		Prerequisite or # Corequisite
			Lecture	Laboratory	
CEE501	Irrigation Engineering	3	3	0	CEE311
CEE502	Introduction to Biotechnology	3	3	0	
CEE503	Environmental and Water Microbiology	3	3	0	
CEE504	Disposal logistics	3	3	0	
CEE505	Pollution Control of the Aquatic Environment	3	3	0	CEE311
CEE506	Water Supply and Wastewater collection	3	3	0	CEE311 & CEE341
CEE507	International Environmental Law	3	3	0	
CEE508	Process Engineering	3	3	0	CEE474
CEE509	Process Operation	3	3	0	CEE474
CEE510	Advanced Wastewater treatment	3	3	0	CEE515
CEE570	Drinking water abstraction and distribution	3	3	0	CEE311
CEE571	Groundwater Modeling and dynamics	3	3	0	
CEE572	Environmental and Water Law and Policy	3	3	0	
CEE573	Heat and Mass transfer	3	3	0	MATH203
CEE518	Environmental unit process and operation	3	3	0	CEE515
CEE519	Hydraulic structure	3	3	0	CEE311
CEE574	Water and Wastewater Reuse	3	3	0	CEE515
CEE479	Advanced topics in Environmental engineering	3	3	0	Department Approval
CEE597	Advanced Topics in Water Engineering	3	3	0	Department Approval
CEE521	Reinforced concrete 2	3	3	0	CEE323
CEE542	Dam Engineering	3	3	0	CEE311, CEE341, & CEE323
CEE543	Geographic Information systems	2	2	0	CS116
CEE544	Geographic Information systems lab	1	0	3	#CEE442
CEE546	Soil and Rock Exploration				CEE341
CEE550	Computer Application in Civil Engineering				Department Approval
CEE555	Sustainable Buildings	3	3	0	CEE351

CEE480	Independent Studies	3	3	0	
CEE481	Special topics	1	1	0	
CEE482	Special topics	2	2	0	
CEE483	Special topics	3	3	0	