

COMSATS University Islamabad

Registrar Office, Academic Unit (PS)

No: CUI-Reg/Notif-1885/23/1975

August 30, 2023

NOTIFICATION

Academic Council in its 37th special meeting held on August 22, 2023, on the recommendations of 32nd special meeting of Board of Faculty of Engineering and 15th Board of Studies of Civil Engineering meeting, approved following Scheme of Studies of Bachelor of Science in Civil Engineering BS (CE) effective from Fall 2023 as per HEC Undergraduate Education Policy, 2023:

1. Name of the Degree: Bachelor of Science in Civil Engineering

Minimum Duration:	04 Years	Minimum Semesters:	08	Minimum Credit Hours required (Single Major):	138
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2. Framework of Courses and Credit Hours for Degree Program (Single Major and Single Major with one Minor):

Sr. No	Course Work	Min No. of Courses	Min No. of Credit Hours
1.	General Education Courses	12	31
2.	Major Engineering Discipline Courses	31	86
3.	Interdisciplinary Courses	4	12
4.	Internship	1	3
5.	Capstone Project	2	6
	Minor 1 (Optional)	4	12
Minimum No. of Courses required:		50-54	0
Minimum No. of Credit hours required:			138-150

Note: Common policies and procedures notified vide No. CUI-Reg/Notif-1794/23/1884, dated August 25, 2023 relating to Undergraduate Degree Programs approved by the Competent Authority and amended from time to time shall be applicable.


Dr. Muhammad Hanif
Deputy Registrar

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1. All Directors, CUI
2. All Deans, CUI
3. Incharge Islamabad Campus, CUI
4. Controller of Examinations, CUI
5. All Chairpersons, CUI
6. All HoDs/Incharge of Academics/Examinations Sections, CUI Campuses
7. Internal distributions, Registrar Office, CUI

CC:

1. PS to Rector CUI
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4. List of General Education Courses

i. **Arts and Humanities** (students must register and pass one course of 2(2, 0) Cr Hrs from the Arts and Humanities course cluster options given below):

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
HUM107	21st Century Communication Skills	2(2, 0)	
HUM122	Fundamentals of Psychology	2(2, 0)	
HUM123	Fundamentals of Philosophy	2(2, 0)	
HUM130	Fundamentals of Sociology	2(2, 0)	
HUM131	Anthropology	2(2, 0)	
HUM209	Fundamentals of Political Science	2(2, 0)	
HUM222	Fundamentals of International Relations	2(2, 0)	

ii. Natural Sciences

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
PHY124	Applied Physics	3(2, 1)	

iii. Social Sciences

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
ECO290	Fundamentals of Engineering Economics	2(2, 0)	

iv. Functional English

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
HUM104	Functional English	3(3, 0)	

v. Expository Writing

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
HUM121	Expository Writing	3(3, 0)	

vi. Quantitative Reasoning

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
MTH114	Calculus and Analytic Geometry	3(3, 0)	
MTH231	Linear Algebra	3(3, 0)	
MTH103	Exploring Quantitative Skills	3(3, 0)	
MTH104	Tools for Quantitative Reasoning	3(3, 0)	

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vii. Islamic Studies (Islamic Studies 2(2, 0) will be a mandatory subject for all students to register and pass, however, non-Muslim students will have the option to substitute Islamic Studies with HUM114 Ethics):

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
HUM112	Islamic Studies	2(2, 0)	
HUM116	Ethics	2(2, 0)	

viii. Ideology and Constitution of Pakistan

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
HUM113	Ideology and Constitution of Pakistan	2(2, 0)	

ix. Application of Information and Communication: (Any one course from the list)

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
CSC103	Programming Fundamentals	4(3, 1)	
CSC101	Applications of Information and Communication Technologies	3(2, 1)	

x. Entrepreneurship:

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
MGT250	Introduction to Entrepreneurship	2(2, 0)	

xi. Civics and Community Engagement

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
HUM208	Civics and Community Engagement	2(2, 0)	

5. Major Engineering Discipline Courses

Knowledge Area	Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
Engineering Foundation	EGG101	Engineering Professionalism	3(3, 0)	
	CEE102	Engineering Mechanics	3(2, 1)	
	CEE102	Civil Engineering Drawing	3(1, 2)	
	CEE104	Civil Engineering Materials	3(2, 1)	
	CEE105	Engineering Geology	2(2, 0)	
	CEE201	Plane Surveying	3(2, 1)	
	CEE204	Soil Mechanics	3(2, 1)	

	CEE202	Mechanics of Solids I	3(2, 1)	
	CEE203	Elementary Fluid Mechanics	3(2, 1)	
	CEE210	Introduction to Transportation Engineering	2(2, 0)	
	CEE207	Basic Structural Analysis	2(2, 0)	CEE101
	CEE306	Engineering Hydrology	2(2, 0)	
Core Breadth	CEE301	Highway Engineering	3(2, 1)	CEE210
	CEE302	Indeterminate Structural Analysis	3(3, 0)	CEE207
	CEE303	Properties of Concrete	3(2, 1)	
	CEE304	Quantity Surveying and Cost Estimation	3(3, 0)	
	CEE307	Environmental Engineering, I	3(2, 1)	
	CEE308	Reinforced Concrete Design I	3(3, 0)	CEE206
	CEE309	Introduction to Architecture and Town Planning	2(2, 0)	
	CEE310	Civil Engineering Construction and Graphics	3(2, 1)	
	CEE312	Construction Management	2(2,0)	
Core Depth	CEE211	Advanced Surveying	3(2, 1)	CEE201
	CEE208	Advanced Fluid Mechanics	3(2, 1)	CEE203
	CEE206	Mechanics of Solids II	3(2, 1)	CEE202
	CEE209	Geotechnical and Foundation Engineering	3(2, 1)	CEE204
	CEE422	Environmental Engineering II	2(2, 0)	
	CEE406	Reinforced Concrete Design II	3(2, 1)	CEE308
	CEE402	Steel Structures	3(3, 0)	
	CEE404	Hydraulics and Irrigation Engineering	3(2, 1)	CEE208
		Major Elective-I	3(3, 0)	
	Major Elective-II	3(3, 0)		
Multi-Disciplinary Engineering	ENV362	Remote Sensing and GIS	3(2, 1)	
	MTH105	Multivariable Calculus	3(3, 0)	MTH114
	DEV435	Disaster Management	3(3, 0)	

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	MGT462	Project Planning and Management	3(3, 0)	
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- i. **List of Major Elective Courses:** (students must register and pass minimum three Major Electives of minimum 10 Cr Hrs mentioned in above table from course cluster options given below)

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
CEE305	Matrix Analysis of Structures	3(3,0)	CEE302
CEE410	Design of Concrete Structures	3(2,1)	CEE410
CEE411	Fundamentals of Geotechnical Earthquake Engineering	3(3,0)	CEE209
CEE412	Rock Mechanics	3(3,0)	CEE209
CEE413	Fundamentals of Dam Engineering	3(3,0)	CEE209
CEE414	Pavement Design and Rehabilitation	3(3,0)	CEE301
CEE415	Traffic Engineering and Safety	3(3,0)	CEE301
CEE416	Road Construction, Materials and Practices	3(3,0)	CEE301
CEE417	Geometric Design of Highways and Streets	3(3,0)	CEE301
CEE419	Design of Hydraulic and Irrigation Structures	3(3,0)	CEE208
CEE424	Elementary Structural Dynamics	3(3,0)	CEE302, CEE308
CEE421	Contract Management	3(3,0)	MGT462
CEE420	Construction Project Scheduling	3(3,0)	MGT462
CEE423	Environment Management and Impact Assessment	3(3,0)	CEE307
CEE311	Fundamentals of Disaster Management	3(3, 0)	
CEE425	Geo-Informatics	3(2, 1)	

6. List of Interdisciplinary Courses

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
ENV362	Remote Sensing and GIS	3(2, 1)	
MTH105	Multivariable Calculus	3(3, 0)	MTH114
DEV435	Disaster Management	3(3, 0)	
MGT462	Project Planning and Management	3(3, 0)	

7. **Internship** (minimum duration 6-8 weeks, preferably conducted in summer breaks after 4th semester)

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
EGG497	Internship	3(0, 3)	

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8. Capstone Project

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
EGG498	Final Year Project (Part I)*	3(0, 3)	
EGG499	Final Year Project (Part II)*	3(0, 3)	EGG498 Final Year Project (Part I)

Notes:

¹ 03 credit hours of theory is equivalent to 03 hours of lectures whereas 01 credit hour of lab is equivalent to 03 hours of lab session. All the lab sessions are graded. Students have to pass both theory and lab to earn the course credits.

† Courses with prerequisites can only be allowed if all prerequisite courses have been passed.

* Students must pass at least 80 credit hours (engineering and non- engineering subjects) to register for the final year project.

** To be offered as a Non-Credit course to the students who have passed FSc/Equivalent with Physics, Mathematics and Computer Studies/Science (ICS) combination, i.e., FSc/Equivalent with non-Pre-Engineering background. These students may preferably pass this remedial course during the 1st year of their degree program. This course will not contribute to student's GPA.

9. Minor 1 (Geoinformatics Engineering)

Minor in Geoinformatics Engineering can be opted for by the students of any department as per CUI policy. The following set of courses totaling 12 credit hours are mandatory for the Minor. Offering of Minor will be decided by the Head of Civil Engineering Department.

Course Code	Course Title	Credit Hours ¹	Prerequisite(s)†
GIE101	Introduction to GIS	3(2, 1)	
GIE206	Earth Observation for the Environment	3(2, 1)	
GIE304	GIS Applications	3(2, 1)	
GIE403	Land use Planning	3(2, 1)	

10. BS Civil Engineering Degree with One Major and Additional Minors

A student may opt for the degree with single major and either one or two additional minors, subject to fulfilling the following conditions for the opted minors:

- A student is required to complete a minimum of 12 credit hours from the same minor cluster to earn the additional minor.

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- b) A course from a minor cluster cannot be registered if the same course is already studied in degree major.
- c) To register for a course in a minor cluster, any required pre-requisite course which is not listed in minor table, should be completed as non-credit course, if not studied in degree major.
- d) With the consent of the Head of Department and the Chairman, any other course from the domain of Civil Engineering, for which prerequisite courses and the above-mentioned conditions are satisfied, can also be offered as a minor course.
- e) The Regulations relating to degree minors approved by the Competent Authority and amended from time to time shall be applicable.

Additional Notes:

1. Students enrolled in the Bachelor of Science in Civil Engineering program have the flexibility to choose to pursue one or two additional minors or even opt for a second major as per the scenarios stated below. These minors and majors can be selected from any category of courses recognized as minors or majors by other programs offered at their respective CUI campus. This choice must adhere to the established rules and regulations of the University.
 - a) **Scenario 1 - Single Major (130 credits):**
This scenario centers on a single major, demanding a minimum of 130 credits for completion. This breakdown includes 30 credits for General Education, a minimum of 86 for the major, 12 for interdisciplinary studies, and 3 each for Field Experience and the Capstone Project.
 - b) **Scenario 2 - Single Major with Minor (142 credits):**
In this case, a single major is accompanied by a minor, requiring a minimum of 142 credits in total. The components encompass 30 credits for General Education, a minimum of 82 for the major, 12 for interdisciplinary studies, and 3 each for Field Experience and the Capstone Project. Additionally, a 12-credit minor complements the major, fostering broader skills.
 - c) **Scenario 3 - Single Major with Two Minors (154 credits):**
Here, a single major is augmented by two minors, totaling a minimum of 154 credits. The distribution consists of 30 credits for General Education, 82 for the major, 12 for interdisciplinary studies, 3 each for Field Experience and the Capstone Project, and two minors with 12 credits each.
 - d) **Scenario 4 - Double Major (192 credits):**
This scenario involves pursuing two majors, necessitating a minimum of 192 credits. The components comprise 30 credits for General Education, 72 for each major, 12 for interdisciplinary studies, 12 for Field Experience, and 3 for the Capstone Project.
2. The study of the Holy Quran and teachings of Sirat un-Nabi (P.B.U.H) courses will constitute a mandatory component of the curriculum for all undergraduate degree programs. These courses will be conducted using a hybrid mode of instruction across the CUI System. Upon successful completion of each course, students will receive a certificate endorsed by the Head of Department (HoD).

