

CIVIL ENGINEERING TECHNOLOGY: BACHELOR

Overview

Program Mission

Working in partnership with industry, the Civil Engineering Technology four years Program provides quality education that prepares innovative engineers capable of serving the community and fulfilling personal ambitions with excellence. The department also strives to produce highly skilled civil engineering technicians after completing the first two years of the program.

Program Description

The Bachelor of Civil Engineering Technology program covers different streams in Civil Engineering including planning and design of buildings, bridges, transportation systems, water resources and supply, with particular attention to protection of the environment. It prepares students for positions as engineers with the technical and managerial skills necessary to enter careers in planning, design, construction, operation and maintenance of infrastructure in a sustainable environment. Civil Engineering Technology provides an excellent broad education with specialized areas to serve the needs of the global UAE industry. The curriculum produces high-quality engineers known for productivity, professionalism, and competence in the workplace. Graduates will have the ability to analyze and design systems, specify project methods and materials, perform cost estimates and analyzes, and manage technical tasks in support of both public and private sector organizations in Civil Engineering construction.

The graduates will have the ability to work professionally and efficiently; to gather and use information effectively. The program instills leadership qualities based on moral and ethical principles coupled with sound and rational judgment.

The program stresses the effective use of technology, information resources and engineering tools. Additionally, the program is designed to prepare students for graduate studies in Civil Engineering Technology and other areas of professional practice.

This program offers elective concentrations in Structures Engineering, Water and Environmental Engineering and Transportation Engineering. Students will have the option to graduate with a Diploma in Civil Engineering Technology upon the successful completion of 76 credits inclusive of the 8 week Work Placement.

Program Goals

1. With the technical knowledge and skills required by the industry to professionally develop, design, construct, operate, and maintain projects in areas of the built environment and global infrastructures.
2. Equipped for lifelong learning, professional development, and adhering to international Code of Ethics.
3. Capable to engage in sustainable activities through community and work-based opportunities.
4. With effective leadership, team building, and communication skills.

Program Learning Outcomes

Upon graduation, a HCT graduate in Bachelor of Civil Engineering Technology should demonstrate:

1. an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the Civil Engineering Technology.
2. an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the Civil Engineering Technology.
3. an ability to apply written, oral, and graphical communication in broadly defined technical and non-technical environments; and an ability to identify and use appropriate technical literature;
4. an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes;
5. an ability to function effectively as a member as well as a leader on technical teams.
6. an ability to develop and evaluate a business plan to transform an engineering design (systems, products ,services and solutions) into a business opportunity utilizing entrepreneurial skills and knowledge

Requirements

Completion Requirements

Bachelor of Civil Engineering Technology

Students must successfully complete a minimum of 146 credits, including:

Code	Title	Credit Hours
Program Core Courses		77
Program Elective Courses		15
Mathematics and Science Courses		21
General Studies course		33
Total Credit Hours		146

Code	Title	Credit Hours
Civil Engineering Core Courses		
Required Credits: 77		
CVE 2001	Applied Drafting and CAD: Civil	1
CVE 2013	CAD tools in Civil Engineering	3
CVE 2103	Site Surveying	3
CVE 2113	Quantity Surveying and Estimating	3
CVE 2203	Engineering Mechanics	3
CVE 2213	Strength of Materials	3
CVE 2303	Soil Mechanics	3
CVE 2403	Fluid Mechanics and Hydraulics	3
CVE 2603	Construction Materials	3
CVE 2613	Civil Engineering Construction	3
CVE 2903	Sophomore Design Project	3
CVE 3203	Structural Analysis	3
CVE 3303	Highway Engineering	3

CVE 3403	Water Resources and Supply	3
CVE 3503	Foundation Engineering	3
CVE 3513	Concrete Design I	3
CVE 4413	Environmental Engineering	3
CVE 4503	Steel Design	3
CVE 4902	Capstone Design Project I	2
CVE 4912	Capstone Design Project II	2
EGN 1133	Design Thinking in Technology	3
EGN 2712	Applied Programming for Engineers	2
EGN 2806	Work Placement I	6
EGN 3012	Project Management	2
EGN 3212	Economics for Engineering	2
EGN 3806	Work Placement II	6

Mathematics and Science Required Courses

Required Credits: 21

CHM 1103	Engineering Chemistry	3
MTH 1103	Pre Calculus	3
MTH 1203	Calculus I	3
MTH 2103	Calculus II	3
MTH 2503	Introduction to Differential Equations	3
MTH 3013	Calculus III	3
PHY 1203	Physics II	3

General Studies

Required Credits: 33

English, Arabic or other Languages

Required Credits: 12

LSC 1103, AES 1013, AES 1033 and LSC 2193

Humanities or Art

Required Credits: 3

AES 1003

Information Technology and Mathematics

Required Credits: 6

ICT 2013 and MTH 1113

The Natural Sciences

Required Credits: 3

PHY 1103

The Social or Behavioral Sciences

Required Credits: 9

LSS 1003, LSS 1123 and BUS 2403

Concentration Name: Structures Engineering

Total Credit Hours: 15

Concentration Curriculum:

Concentration Electives:

Code	Title	Credit Hours
CVE 4513	Concrete Design II	3
CVE 4523	Steel Design II	3
CVE 4533	Prestressed Concrete Design	3
CVE 4603	Construction Contract Management	3
CVE 4613	Concrete Technology	3
CVE 4803	Special Topics in Civil Engineering	3

CVE 4893	Directed Study	3
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Concentration code: STR

Concentration Name: Transportation Engineering

Total Credit Hours: 15

Concentration Curriculum:

Concentration Electives:

Code	Title	Credit Hours
CVE 4303	Traffic Engineering	3
CVE 4313	Urban Transportation	3
CVE 4323	Transportation Planning	3
CVE 4333	GIS Applications in Civil Engineering	3
CVE 4343	Bridge Engineering	3
CVE 4353	Road Design and Construction	3
CVE 4803	Special Topics in Civil Engineering	3
CVE 4893	Directed Study	3

Concentration code: TRN

Concentration Name: Water and Environmental Engineering

Total Credit Hours: 15

Concentration Curriculum:

Concentration Electives:

Code	Title	Credit Hours
CVE 4403	Waste Water Engineering	3
CVE 4423	Solid Waste Management	3
CVE 4433	Sustainability in Civil Engineering	3
CVE 4443	Coastal Engineering	3
CVE 4453	Environmental Regulatory Compliance and Public Policy	3
CVE 4463	Green Buildings	3
CVE 4803	Special Topics in Civil Engineering	3
CVE 4893	Directed Study	3

Concentration code: WAE

Description	Data
Total Required Credits	146
Maximum Duration of Study	6 years
Minimum Duration of Study	4 years
Cost Recovery Program	No
Program Code	BCVET
Major Code	CVE

Ideal Study Plan

Recommended Sequence of Study

Year 1

Semester 1

		Credit Hours
EGN 1133	Design Thinking in Technology	3
LSC 1103	Professional Communication and Reporting	3
LSS 1003	Life and Future Skills	3
MTH 1103	Pre Calculus	3
PHY 1103	Physics I	3

Credit Hours

15

Semester 2		
AES 1013	Arabic Communications I	3
AES 1033	Islamic Culture	3
MTH 1113	Statistics for Engineering	3
MTH 1203	Calculus I	3
PHY 1203	Physics II	3
	Credit Hours	15
Summer		
CHM 1103	Engineering Chemistry	3
MTH 2103	Calculus II	3
	Credit Hours	6
Year 2		
Semester 3		
AES 1003	Emirati Studies	3
CVE 2001	Applied Drafting and CAD: Civil	1
CVE 2103	Site Surveying	3
CVE 2203	Engineering Mechanics	3
CVE 2603	Construction Materials	3
ICT 2013	Computational Thinking and Coding	3
	Credit Hours	16
Semester 4		
CVE 2013	CAD tools in Civil Engineering	3
CVE 2113	Quantity Surveying and Estimating	3
CVE 2213	Strength of Materials	3
CVE 2303	Soil Mechanics	3
CVE 2403	Fluid Mechanics and Hydraulics	3
CVE 2903	Sophomore Design Project	3
	Credit Hours	18
Summer		
EGN 2806	Work Placement I	6
	Credit Hours	6
Year 3		
Semester 5		
CVE 2613	Civil Engineering Construction	3
CVE 3203	Structural Analysis	3
CVE 3403	Water Resources and Supply	3
CVE 3503	Foundation Engineering	3
LSS 1123	Basic Research Methods	3
MTH 2503	Introduction to Differential Equations	3
	Credit Hours	18
Semester 6		
CVE 3303	Highway Engineering	3
CVE 3513	Concrete Design I	3
EGN 2712	Applied Programming for Engineers	2
EGN 3012	Project Management	2
LSC 2193	Applied Skills Capstone	3
MTH 3013	Calculus III	3
	Credit Hours	16
Summer		
EGN 3806	Work Placement II	6
	Credit Hours	6
Year 4		
Semester 7		
BUS 2403	Innovation and Entrepreneurship	3
CVE 4902	Capstone Design Project I	2
EGN 3212	Economics for Engineering	2
3 Elective Courses		9
	Credit Hours	16
Semester 8		
CVE 4413	Environmental Engineering	3
CVE 4503	Steel Design	3

CVE 4912	Capstone Design Project II	2
2 Elective Courses		6
	Credit Hours	14
	Total Credit Hours	146

Faculty and Academic Staff

Abu Dhabi Men's

Anf Ziadat, PhD Civil Engineering, South Dakota School Mines and Technology, USA

Milan Krasulja, PhD Civil Engineering, University of Belgrade, Serbia

Nassir Eltinay, Masters Architectural Engineer, The University of Kansas, USA

Nawel Chenaf, PhD Civil Engineering, ÉCOLE CENTRALE DE NANTES-FRANCE, NANTES France

Tarig Ahmed, PhD Civil Engineering, University of London, UK

Vasko Alexandrov, PhD Civil Engineering, University of Architecture, Civil Engineering and Geodesy, Bulgaria

Dubai Men's

Elgaali Elgaali, PhD Civil Engineering, University of Colorado, USA

Imad Chobaki, PhD Civil and Structural Engineering, University of Salford, UK

Majid Akram, PhD Civil Engineering, West Virginia University, USA

Sukina Alzyoud, PhD Civil Engineering, Imperial College London, UK