

# Introduction

The Department of Civil and Environmental Engineering (CEE) at the American University of Beirut is one of the best established and most reputable in the region. To date it has offered only one degree at the undergraduate level: a Bachelor of Engineering (B.E.) in Civil Engineering. This program is a 4 year (+3 summers) program for a total of 143 cr. (post freshman).

Following a careful assessment of rapidly growing needs and demands of the local and regional construction industry, the CEE Department at AUB will be offering a new undergraduate program leading to a Bachelor of Science (B.S.) in Construction Engineering. The program is a 3 year (+2 summers) for a total of 110 cr. (post freshman). The new program is set to start in the Fall 2009-2010 semester.

AUB is well-positioned to play a vital role in serving industry needs and in helping to define new trends, materials and technologies in construction. It is the goal of this program to benefit from the location and standing of AUB in the region to attract local and regional students who are seeking American style education from an accredited institution.

In recent years, 50-60% of job placement for graduates of the Civil Engineering Program from AUB has been in the construction and contracting industry.

## Quoting an AUB Graduate

*These are interesting and exciting times to join the profession and be part of the effort to rebuild, upgrade, and redefine the whole region.*

In line with the new B.S. program the Department of Civil and Environmental Engineering at AUB is in the process of planning for a graduate program in the same area leading to a Masters of Science (M.S.) degree in Construction Engineering. The new graduate program should be ready to start by Fall 2012.



## Supporting Labs and Facilities

The Construction Engineering Program will use the following fully equipped laboratories and facilities, staffed with trained and experienced technicians:

1. Structural and Materials Laboratory
2. Geotechnical Laboratory
3. Transportation and Surveying Facilities
4. Environmental and Water Resources Laboratories
5. Computer Laboratories

It is anticipated that within two years of the program launch, a state-of-the-art computer lab will be available for use by students. The laboratory will include the latest software and equipment for simulation, scheduling, and 3-D visualization of construction projects and processes.



### For more information contact:

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The American University of Beirut  
A New Program

**Construction Engineering**  
Bachelor of Science (B.S.) in Construction Engineering



# Mission of the Program

Consistent with the mission of AUB, the mission of the undergraduate programs of the CEE department is to provide a stimulating and supportive environment for high-standard education; to prepare graduates for a lifelong productive career in addressing problems in a rapidly-changing world, while instilling in them an appreciation of leadership qualities, professionalism, and ethics; to provide professional services of the highest quality to the community; to contribute to expanding the knowledge and technological base in civil and environmental engineering.

The specific educational objectives of the program fall within the following themes:

- Civil Engineering Fundamentals and Design
- Construction Engineering Basic Skills, Principles and Technologies
- Construction Engineering Professional and Business Components
- Contemporary Issues and Social Context

# Objectives of the Program

The general objective of the new Construction Engineering program is to provide graduates with: basic civil engineering knowledge; proficiency in an engineering construction specialty field; an understanding of construction processes and methods; an expertise in the latest construction materials and technologies; and an experience in management, economics, cost analysis and control, and safety.

The graduates of the program will be able to integrate into the construction engineering industry. In addition to their technical know-how and problem solving skills, potential employers will value their communication and leadership abilities and their aptitude to effectively work in teams.

# Admission Requirements

Entry into the Construction Engineering Program is competitive and based on availability. The admission criteria are primarily based on the student's academic record (high school grades) and SAT I results. Formal admission to the first year (sophomore level) is also conditional on meeting the following requirements:

- Completing the pre-professional requirements of the candidate's country of origin (e.g. high school) and an approved freshman program at the Faculty of Arts and Sciences at AUB, or elsewhere if recognized as equivalent.
- Satisfying the English Language Proficiency requirement in one of the following ways:

- Scoring a minimum of 575 on the TOEFL (paper and pencil) exam or 230 on the TOEFL (computer-based) exam.
- Achieving a minimum score of 500 on the verbal reasoning section of SAT I.
- Passing the English Entrance Exam (EEE) administered by AUB (Office of Institutional Research and Assessment) with a minimum score of 500.
- Achieving a minimum score of 7.0 on the International English Language Testing System (IELTS).

# Program Requirements

The undergraduate curriculum for the degree of Bachelor of Science (B.S.), Major Construction Engineering, is a three-year program beyond the freshman year which is equivalent to 30 credit hours. Students who are admitted at the sophomore level will be required to complete 110 semester credit hours of course work as outlined below.

<b>General Engineering (17 credits)</b>		
CIVE 200	Intro to Civil/Construction Engineering	2 cr.
CIVE 210	Statics	3 cr.
CIVE 2XX	Construction Drawing/Eng. Graphics	2 cr.
EECE 210	Electric Circuits	3 cr.
CIVE 310	Mechanics of Materials	3 cr.
CIVE 370	Introduction to Information Technology	4 cr.
<b>Mathematics (9 credits)</b>		
MATH 201	Calculus and Analytic Geometry	3 cr.
MATH 251	Numerical Computing	3 cr.
STAT 230	Intro to Probability and Random Variables	3 cr.
<b>Sciences (9 credits)</b>		
PHYS 210	Introductory Physics II	3 cr.
PHYS 210L	Introductory Physics Laboratory II	1 cr.
CHEM 202	Intro to Environmental Chemistry	3 cr.
CHEM 203	Introductory Chemical Techniques	2 cr.
<b>General Education (24 credits)</b>		
ENGL 206	Intro to Civil/Construction Engineering	3 cr.
	Arabic Elective	3 cr.
	Humanities Elective	9 cr.
	Ethics Course (PHIL 206, PHIL 209, or PHIL 210)	3 cr.
	Social Sciences Elective	3 cr.
ECON 212	Elementary Macroeconomic Theory	3 cr.



<b>Basic Civil/Environmental Engineering (21 credits)</b>		
CIVE 311	Structures I	3 cr.
CIVE 340	Fluid Mechanics and Laboratory	3 cr.
CIVE 350	Environmental Engineering	3 cr.
CIVE 420	Concrete I	3 cr.
CIVE 431	Soil Mechanics and Laboratory	3 cr.
CIVE 440	Hydraulics and Laboratory	3 cr.
CIVE 460	Highway Engineering	3 cr.

<b>Construction Core Courses (18 credits)</b>		
CIVE 321	Construction Materials and Quality Control	3 cr.
CIVE 361	Surveying for Construction Engineering	3 cr.
CIVE 480	Construction Management	3 cr.
CIVE 481	Construction Planning and Scheduling	3 cr.
CIVE 482	Construction Operations	3 cr.
ARCH 242	Building Construction	3 cr.

<b>Construction Technical Electives (6 credits)</b>		
CIVE 581	Specifications and Cost Estimation	3 cr.
CIVE 583	Const. Business Management & Financing	3 cr.
CIVE 584	Selection & Utilization of Const. Eqpt.	3 cr.
CIVE 585	Computer Aided Const. Automation & Simul.	3 cr.
CIVE 856	Construction Methods and Safety	3 cr.
CIVE 589	Infrastructure Construction & Evaluation	3 cr.

**General Civil Engineering Technical Electives (6 credits)**  
All Civil Engineering senior level undergraduate courses (400 level & above). Student may select one area of emphasis: Transportation, Structural, Geotechnical, Environmental.