Sustainable Building Systems, MSSBS (Boston)

Website (https://cee.northeastern.edu/academics/graduate-studies/ms-subs/)

The sustainable building systems program focuses on the design and operation of buildings to provide a comfortable, healthy, and productive indoor environment with minimal energy and environmental impact. Students have an opportunity to develop leadership and decision-making skills to implement sustainable building practices in either the private or public sectors in the global market.

The graduates of the Master of Science in Sustainable Building Systems (https://cee.northeastern.edu/academics/graduate-studies/ms-subs/) program should display a high level of engineering knowledge in a broad range of architectural engineering, civil engineering, and construction management while embracing the concepts of engineering sustainability as related to energy and materials usage and the effects on the environment. Graduates will have the base training necessary to lead efforts within companies to plan and implement sustainable practices for the design and operation of buildings, realize energy and materials efficiency improvements, and minimize environmental impact. Upon graduation, students will have a theoretical background to the concepts behind the LEED (Leadership in Energy and Environmental Design) Green Associate examination.

Below is a typical course sequence for graduation in two semesters. The program is flexible to accommodate full-time students—who wish to proceed over a period of two to four semesters—and part-time students—who can complete the program requirements by taking one to two courses per semester, finishing the program in approximately four years.

Degree Requirements	With Project	With Thesis	Coursework Only
Core courses	12 SH	12 SH	12 SH
Restricted electives	8 SH	8 SH	8 SH
Other electives	8 SH	4 SH	12 SH
Master of Science report/thesis	4 SH	8 SH	
Minimum semester hours required	32 SH	32 SH	32 SH

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (https://catalog.northeastern.edu/graduate/engineering/graduate-certificate-programs/).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Sustainable Building Systems with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Sustainable Building Systems in addition to earning a Graduate Certificate in Engineering Leadership (https://catalog.northeastern.edu/graduate/engineering/multidisciplinary/engineering-leadership-graduate-certificate/). Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 36-semester-hour degree and certificate will require fulfillment of the 12-semester-hour core curriculum and 8 semester hours of restricted electives from the sustainable building systems coursework. Students who concurrently enroll in the Graduate Certificate in Engineering Leadership may apply 12 semester hours of the certificate coursework to this program's unrestricted elective requirements.

The Civil and Environmental Engineering Department encourages students pursuing the Graduate Certificate in Engineering Leadership to complete their MS coursework requirements in their first year and their certificate requirements in their second year. Students who prefer to complete their certificate requirements in their first year should speak with their MS degree program coordinator prior to registration.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
ARCH 5210 and ARCH 5211	Environmental Systems and Recitation for ARCH 5210	4
SBSY 5100	Sustainable Design and Technologies in Construction	4
SBSY 5200	Sustainable Engineering Systems for Buildings	4
Students must register for this 0-semester-hour course every semester.		
SBSY 5400	Sustainable Building Systems Seminar	

Options

Complete one of the following options:

COURSEWORK OPTION

Code	Title	Hours
Complete 8 semester hours from the restricted electives list below. (p. 2)		8
Complete 12 semester hours from the other electives list below. (p. 2)		12

PROJECT OPTION

Code	Title	Hours
SBSY 7945	Master's Project	4
Complete 8 semester hours from the restricted electives list below. (p. 2)		8
Complete 8 semester hours from the other electives list below. (p. 2)		8

THESIS OPTION

Code	Title	Hours
SBSY 7945	Master's Project	4
SBSY 7990	Thesis	4
Complete 8 semester hours from the restricted electives list below. (p. 2)		8
Complete 4 semester hours from the other electives list below. (p. 2)		4

In addition to completing the thesis course, students must successfully complete the thesis submission process, including securing committee and Graduate School of Engineering signatures and submission of an electronic copy of their MS thesis to ProQuest.

Optional Co-op Experience

Code	Title	Hours
Complete the following (students must complete ENCP 6100 to qualify for co-op experience):		
ENCP 6100	Introduction to Cooperative Education	1
ENCP 6964	Co-op Work Experience	0
or ENCP 6954	Co-op Work Experience - Half-Time	
or ENCP 6955	Co-op Work Experience Abroad - Half-Time	
or ENCP 6965	Co-op Work Experience Abroad	

Program Credit/GPA Requirements

32 total semester hours required (33 with optional co-op)
Minimum 3.000 GPA required

Electives

RESTRICTED ELECTIVES LIST

Code	Title	Hours
Complete 8 semester hours from the following:		8
ARCH 5220	Integrated Building Systems	
CIVE 5221	Construction Project Control and Organization	
CIVE 5231	Alternative Project Delivery Systems in Construction	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
CIVE 7220	Construction Management	
or EMGT 5220	Engineering Project Management	
CIVE 7230	Legal Aspects of Civil Engineering	
EMGT 6305	Financial Management for Engineers	
SBSY 5250	Building Performance Simulation	
SBSY 5300	Information Systems for Integrated Project Delivery	

OTHER ELECTIVES LIST

Any restricted elective not used to meet the restricted elective requirement can be taken as another elective.

Code	Title	Hours
Complete 12 semester hours from the following:		12
ACCT 6200	Financial Reporting and Managerial Decision Making 1	
ACCT 6201	Financial Reporting and Managerial Decision Making 2	

CIVE 7151	Urban Informatics and Processing
CIVE 7350	Behavior of Concrete Structures
CIVE 7351	Behavior of Steel Structures
CIVE 7388	Special Topics in Civil Engineering (Dynamics and Control of Infrastructure Systems)
FINA 6200	Value Creation through Financial Decision Making
FINA 6216	Valuation and Value Creation
FINA 6217	Real Estate Finance and Investment
LPSC 7312	Cities, Sustainability, and Climate Change