

MASTER OF ENGINEERING (M.Eng.) PROGRAMS

Note: *On-line registration is available to M.Eng. students only. For Program Requirements, see Section 2 and 3 below.*

1. ADVISING INFORMATION FOR ON-LINE REGISTRATION

- Go to MyConcordia Portal and make a link to Registration. Follow the instructions.
- Link to School of Graduate Studies [On-Line Registration Advising](#).

M.Eng. Students Registering On-Line are allowed to:

- Register for courses in Building and Civil Engineering ONLY
- Register for a Maximum of 3 Courses (12 credits) plus the 1 Credit Seminar (BCEE 6961) per semester. (NOTE: It is recommended that new international students register for a maximum of 2 courses in their first semester.)
- Full-time students may register for 8 to 12 credits per semester. Part-time students may register for 4 to 7 credits per semester.

M.Eng. Students Registering On-Line are NOT allowed to:

- Register a course for Audit.

Prior Departmental Permission is required for: (Go to EV6.139)

- Registering for courses without the listed pre-requisites.
- Registering for the M.Eng. Projects – ENGR 6971, ENGR 6981, ENGR 6991.
- Registering for ENCS 6931, Industrial Training (9 Credit Elective Option).
- Registering for Courses Outside of the Department
- Register for MBA courses

You will be BLOCKED from registering if you have:

- An **Academic Block** – GPA is below 3.00, F grade on record, more than one C grade on record. Permission to Register is required, Go to EV6.139
- An **Accounts Block** – outstanding balance of fees due . Go to Birk's Student Service Centre, LB-185
- A **CAQ Block** – expired Study Permit. Go to the International Students Office, H-653

Contact: Jenny Drapeau, Graduate Program Advisor, Room EV6.154, Tel: 514-848-2424 Ext. 3205 (jenny@encs.concordia.ca)

2. PROGRAM REQUIREMENTS

Students must complete 45 credits distributed as follows:

Building Engineering Program

The courses must be selected as follows:

- A minimum of 21 credits chosen from one of the Course Groups in List A. This set of courses may also include the project and seminar courses ENGR 6991, BCEE 6961 or the industrial training course ENCS 6931.
- Note: Students who have taken ENCS 6931 cannot take any of the following three courses: ENGR 6971, ENGR 6981 or ENGR 6991; and vice-versa.
- A minimum of 12 credits chosen from the Topic Area E35 and those Course Groups of List A other than the group chosen in (1) above. These groups of courses could include special program courses put on for or by a given industry in conjunction with the Faculty.
- A maximum of 12 credits chosen from the Engineering Courses section including E72 (M.B.A. courses).

Course Groups for M.Eng (Bldg)

List of Topic Areas

- **Group 1** - Building Environment - BLDG 6611* plus courses in the Topic Areas: E07, E21, E23.
- **Group 2** - Building Science - BLDG 6611* plus courses in the Topic Areas: E21, E22
- **Group 3** - Building Structures - Topic Areas: E06, E21, E31
- **Group 4** - Construction Management - Topic Areas: E21, and E24

The document [Bldg courses \(.xls\)](#) will help you select the courses in order to satisfy the above requirements.

Civil Engineering Program

Students must complete 45 credits of 6000 or 7000 level courses. The courses must be selected as follows: [\(Course descriptions\)](#)

- A minimum of 21 credits chosen from one of the Course Groups in List B. This set of courses may also include the project and seminar courses ENGR 6991, BCEE 6961 or the industrial training course ENCS 6931.

Note: Students who have taken ENCS 6931 cannot take any of the following three courses: ENGR 6971, ENGR 6981 or ENGR 6991; and vice-versa.

- 2. A minimum of 12 credits chosen from the topic area E24 and those Course Groups of List B other than the group chosen in (1) above. These groups of courses could include special program courses put on for or by a given industry in conjunction with the Faculty.
- 3. A maximum of 12 credits chosen from the Engineering Courses section including E72 (MBA. courses).

The document [Civil courses](#) (.xls) will help you select the courses in order to satisfy the above requirements.

List B: Course Groups for MEng (Civil) [List of Topic Areas](#)

- **Group 1** - Environmental Engineering and Water Resources - Topic Areas: E04, E33, E36, E37
- **Group 2** - Geotechnical and Transportation Engineering - Topic Areas: E03, E34, E35
- **Group 3** - Structural Engineering - Topic Areas: E06, E31, E32
- **Group 4** - Construction Management - Topic Areas: E21, E24

For information on the Industrial Experience go to [the program website](#):

Link to Engineering Courses section of the [Graduate Calendar](#).

3. TOPIC AREAS IN BUILDING AND CIVIL ENGINEERING

Note: Courses marked with (*) cannot be taken for credit by students who have completed the undergraduate equivalent at Concordia University.

E02 – Developments in Engineering

ENGR 691 Topics in Engineering I

ENGR 791 Topics in Engineering II

BLDG 691 Topics in Building Engineering I

BLDG 791 Topics In Building Engineering II

CIVI 691 Topics in Civil Engineering I

CIVI 791 Topics In Civil Engineering II

Special Topics courses will be indicated by a letter following the course number. (Example: BLDG 691C). Students may re-register for these courses, providing the course content has changed (CIVI 691A, CIVI 691B, etc.)

E03 - SYSTEMS AND CONTROL

ELEC 6041 Large-scale Control Systems

ELEC 6061 Real-time Computer Control Systems

ELEC 6091 Discrete Event Systems

ENGR 6071 Switched and Hybrid Control Systems

ENGR 6131 Linear Systems (*)

ENGR 6141 Nonlinear Systems

ENGR 7121 Analysis and Design of Linear Multivariable Systems

ENGR 7131 Adaptive Control

ENGR 7181 Digital Control of Dynamic Systems

MECH 6681 Dynamics and Control of Nonholonomic Systems

E04 - FLUID MECHANICS

ENGR 6201 Fluid Mechanics

ENGR 6221 Microfluidic Systems

ENGR 6241 Hydrodynamics

ENGR 6251 The Finite Difference Method in Computational Fluid Dynamics

ENGR 6261 The Finite Element Method in Computational Fluid Dynamics

ENGR 6281 Modeling Turbulent Flows

ENGR 6291 Rheology

E06 - STRUCTURAL MECHANICS

ENGR 6501 Applied Elasticity

ENGR 6511 Matrix Analysis of Structures (*)

ENGR 6531 The Finite Element Method in Structural Mechanics

ENGR 6541 Structural Dynamics

ENGR 6551 Theory of Elastic and Inelastic Stability

ENGR 6561 Theory of Plates and Shells

ENGR 6571 Energy Methods in Structural Mechanics

ENGR 6581 Introduction to Structural Dynamics (*)
ENGR 7521 Advanced Matrix Analysis of Structures
ENGR 7531 Boundary Element Method in Applied Mechanics

E07 - ENERGY CONVERSION

BLDG 6951 Passive Solar Building Design
ENGR 6601 Principles of Solar Engineering
ENGR 6611 Equipment Design for Solar Energy Conversion
ENGR 6661 Solar Energy Materials Science
ENGR 6811 Energy Resources: Conventional and Renewable

E08 - ACADEMIC, MANAGEMENT AND COMMUNICATION SKILLS

ENCS 5721 Composition and Argumentation for Engineers
ENCS 6041 Creativity, Innovation, and Critical Thinking
ENCS 6721 Technical Writing and Research Methods for Scientists and Engineers

E21 - INTEGRATIVE STUDIES FOR BUILDING ENGINEERING

BLDG 6111 Computer-Aided Building Operation
BLDG 6151 Database Applications in Building and Civil Engineering
BLDG 6221 Design of Computer Aided Systems in Building and Civil Engineering
BLDG 6231 Applications of Artificial Intelligence in Building and Civil Engineering
BLDG 6541 Heat Transfer ()**
BLDG 6561 Building Economics I ()**
BLDG 6571 Project Management
BLDG 6581 Decision Analysis
BLDG 6591 Computer-Aided Building Design (*)
BLDG 6631 Fundamentals of Facility Management
BLDG 6861 Simulations and Design of Construction Operations
BLDG 7511 Integrated Building Design

E22 - BUILDING SCIENCE

BLDG 6601 Building Enclosure (*)
BLDG 6611 Building Science ()**
BLDG 6621 Modern Building Materials (*)
BLDG 6641 Industrialized Building
BLDG 6651 Fire and Smoke Control in Buildings (*)
BLDG 6661 Hydrothermal Performance of the Building Envelope

BLDG 6671 Diagnostics and Rehabilitation of Building Envelope

BLDG 7601 Durability of Building Materials

E23 - BUILDING ENVIRONMENT

BLDG 6701 Building Environment

BLDG 6711 Mechanical Systems in Building

BLDG 6721 Building Acoustics (*)

BLDG 6731 Building Illumination (*)

BLDG 6741 HVAC Control Systems

BLDG 6751 Indoor Air Quality and Ventilation (*)

BLDG 6761 Intelligent Buildings

BLDG 6781 Energy Management in Buildings

BLDG 6791 Thermal Building Simulation

BLDG 7401 Dispersion of Building Exhaust

E24 - CONSTRUCTION MANAGEMENT

BLDG 6801 Construction Planning and Control

BLDG 6811 Labour and Industrial Relations in Construction (*)

BLDG 6821 Legal issues in Construction (*)

BLDG 6831 Construction Processes (*)

BLDG 6851 Project Cost Estimating

BLDG 6921 Trenchless Technology for Rehabilitation Works

BLDG 7811 Project Acquisition and Control

BLDG 7831 Building Economics II

BLDG 7841 Information Technology Applications in Construction

BLDG 7861 Business Practices in Construction

BLDG 7871 Construction Equipment Management

E31 - STRUCTURAL ENGINEERING

BLDG 6061 Structural Systems for Buildings

BLDG 6071 Wind Engineering and Building Aerodynamics

BLDG 6931 Infrastructure Rehabilitation

CIVI 6001 Advanced Reinforced Concrete

CIVI 6011 Pre-cast and Pre-stressed Concrete Structures

CIVI 6051 Design of Industrial Structures

CIVI 6061 Structural Health Monitoring

CIVI 7001 Earthquake Engineering
CIVI 7031 Dynamics of Foundations

E32 - BRIDGE ENGINEERING

CIVI 6101 Planning and Design of Bridges
CIVI 7101 Theory and Design of Orthotropic Bridges
CIVI 7111 Theory and Design of Modern Bridge Systems
CIVI 7121 Cable Stayed Bridges

E33 - WATER RESOURCES

CIVI 6301 Hydrology (*)
CIVI 6331 Hydraulic Engineering
CIVI 6381 Hydraulic Structures
CIVI 7311 Groundwater Flow

E34 - URBAN TRANSPORTATION

CIVI 6401 Transportation Systems Analysis
CIVI 6411 Urban Transportation Planning (*)
CIVI 6441 Traffic Engineering (*)
CIVI 6451 Pavement Design
CIVI 7401 Design of Transportation Terminals

E35 - GEOTECHNICAL ENGINEERING

CIVI 6501 Foundation Engineering
CIVI 6511 Earth Structures and Slope Stability
CIVI 6521 Soil Behaviour
CIVI 6531 Soil Testing and Properties
CIVI 6541 Reinforced Earth

E36 - INDUSTRIAL WASTE MANAGEMENT

CIVI 6481 Hazardous Waste Management
CIVI 6491 Engineering Aspects of Site Remediation
CIVI 6631 Transportation of Hazardous Materials and Wastes
CIVI 6661 Environmental Impact Assessment
CIVI 6671 Fate and Transport of Contaminants in the Environment

E37 - ENVIRONMENTAL ENGINEERING

CIVI 6601 Modeling Aspects of Environmental Systems

CIVI 6611 Environmental Engineering

CIVI 6621 Engineering Aspects of Biological Treatment for Air and Water

CIVI 6641 Unit Operations in Environmental Engineering

CIVI 6651 Water Pollution and Control

CIVI 6901 Selected Topics in Civil Engineering I

- Must be approved by the student's supervisor.
- Students may register for a maximum of 3 courses (12 credits) per semester.
- MASc students may take a total of 2 courses outside of the Department, within the Engineering Courses section of the Graduate Calendar, with approval from their supervisor.
- Ph.D. students may take one course outside of the Department, within the Engineering Courses section of the Graduate Calendar, with approval from their supervisor.

Link to Engineering Courses section of the [Graduate Calendar](#):

- Graduate Registration Forms are available in the Reception area of the Department (EV-6.139).
- Complete the registration form in full: Name, I.D. number, Program, Courses (e.g. BLDG 6831/4 WW), Signature and email address.
- The registration form must be signed by the student's supervisor.
- Bring the registration form to the Graduate Program Advisor's Office to register for courses.

Graduate Program Advisor: Jenny Drapeau, Graduate Program Advisor, Room EV6.154, Tel: 514-848-2424 Ext. 3205 (jenny@encs.concordia.ca)