

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

#### **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](mailto: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**