

May 1, 2015

Subject: Important Notes and Curriculum Changes in the 2015-2016 Calendar

Dear Student,

Each May, all students enrolled in the **Electrical Engineering** program are mailed a letter advising them of curriculum changes that have occurred since their entry into the program. This letter and letters from previous years can be viewed at the following website:

<http://www.encs.concordia.ca/current-students/undergraduate-program-requirements/course-sequences/electrical-engineering/>

Students must meet the requirements of their program in the calendar for the year in which they graduate. This letter is to advise you of changes to your program that will appear in the **2015-2016** Calendar. These changes may affect your selection of courses. Should you have any questions regarding this issue, please do not hesitate to contact Student Academic Services at (514) 848-2424, extension 3055.

You can view the program requirements and course descriptions at the following website:
http://registrar.concordia.ca/calendar/pdf/calendar_pdf.html

VERY IMPORTANT: Students must have completed all 200-level courses required from their program before they can register for *any* 400-level course.

All 200-level courses within the program taken after September 1, 2012 which are prerequisites for other courses must be completed with a C- or higher. A 200-level course in which a student has obtained a D+ or lower must be repeated before attempting a course for which it is a prerequisite.

Students are required to graduate having met the substantial equivalent of the curriculum in force in the Winter Term prior to degree conferral.

You must apply for graduation. The application form can be found at:
<http://registrar.concordia.ca/convo/gradapp.html>.

The deadlines to apply for graduation are:

Spring Convocation January 15th, Fall Convocation July 15th.

1. Changes to the Engineering Core

There are no changes to the Engineering Core.

2. Electrical Engineering Core

- a) The Electrical Engineering Core has **changed** from 59.50 to 62.50 credits.
- b) ELEC 311 Electronics I has **changed** from 4.00 credits to 3.50 credits. *Please note that students who have completed this course prior to May 2015 will receive 4.00 credits.*
- c) ELEC 312 Electronics II has **changed** from 4.00 credits to 3.50 credits. *Please note that students who have completed this course prior to May 2015 will receive 4.00 credits.*
- d) ELEC 312 Electronics II (now 3.50 credits) was **added** to the Electrical Engineering Core. *Please note that, as a transitional measure, students who graduate by May 2016 can do so without completing ELEC 312 provided they complete sufficient credits overall.*

Commented [SC1]:

3. Electrical Engineering Options

I. Electronics/VLSI Option:

- a) The Electronics/VLSI Option Core has **changed** from 30.00 to 27.00 credits.
- b) ELEC 312 Electronics II (4.00 credits) was **removed** from the Electronics/VLSI Option Core.
- c) The minimum number of Elective credits has **changed** from 18.50 to 19.50. Note: the minimum number of credits students are required to take from the Electronics/VLSI Option Electives has **changed** from 3.50 to 7.50 credits. Students are responsible to take sufficient technical electives in order to complete their program.

Electronics/VLSI Option Electives:

There are no changes to the Electronics/VLSI Option Electives.

II. Telecommunications Option:

- a) The Telecommunications Option Core has **changed** from 30.00 to 27.00 credits.

Commented [GC2]: I suggest we remove the word core when discussion total # of credits for an option. It is not core since it is composed of required and elective cores.

- b) The minimum number of Elective credits has **changed** from 20.00 to 17.00. Note: the minimum number of credits students are required to take from the Telecommunications Option Electives list remains 6.00 credits out of the 17.00 elective credits required. Students must take sufficient technical electives in order to complete their program.

Telecommunications Option Electives:

There are no changes to the Telecommunications Option Electives.

III. Power and Renewable Energy Option:

- a) The Power and Renewable Energy Option Core has **changed** from 30.00 to 27.00 credits.
- b) The minimum number of Elective credits has **changed** from 16.50 to 13.50 Note: the minimum number of credits students are required to take from the Power and Renewable Energy Option Electives list remains 3.00 credits out of the 13.50 elective credits required. The rest may be chosen from the Electrical Engineering Elective lists. Students must take sufficient technical electives in order to complete their program.

Power and Renewable Energy Option Electives:

There are no changes to the Power and Renewable Energy Option Electives list.

IV. Avionics and Control Option:

- a) The Avionics and Control Option Core has **changed** from 30.00 to 27.00 credits.
- b) The minimum number of Elective credits has **changed** from 14.00 to 11.00 which must be chosen from the Electrical Engineering Elective lists. Students must take sufficient technical electives in order to complete their program.

V. For students NOT selecting an option:

- a) The minimum number of credits for a students who has not selected an option has **changed** from 29.50 to 27.00 which all must be chosen from the Electrical Engineering Elective lists.

4. Electrical Engineering Technical Electives

A. Communication and Signal Processing:

No changes to Technical Electives in option A.

ELEC 441	Modern Analog Filter Design	3.50
ELEC 442	Digital Signal Processing	3.50
ELEC 462	Introduction to Digital Communications	3.50
ELEC 463	Telecommunication Networks	3.00
ELEC 464	Wireless Communications	3 .00
ELEC 465	Networks Security and Management	3 .50
ELEC 466	Introduction to Optical Communication Systems	3 .50
ELEC 472	Advanced Telecommunication Networks	3 .50

B. Computer systems:

- a) COEN 316 Computer Architecture and Design **changed** from 3.00 to 3.50 credits. *Please note that students who have completed this course before May 2015 will receive 3.00 credits.*
- b) COEN 316 Computer Architecture and Design now has COEN 313 as a prerequisite. COEN 212 has been removed from its prerequisite list. *Please note that as a transitional measure, students can take COEN 316 before September 2016 with only COEN 212 instead of COEN 313 as a prerequisite.*
- c) COEN 317 Microprocessor Systems now has COEN 313 as a prerequisite. COEN 212 has been removed from its prerequisite list. *Please note that as a transitional measure, students can take COEN 317 before September 2016 with only COEN 212 instead of COEN 313 as a prerequisite.*

COEN 313	Digital Systems Design II	3 .50
COEN 316*	Computer Architecture and Design	3.50
COEN 317	Microprocessor Systems	4.00
COEN 320	Introduction to Real-Time Systems	3 .00
COEN 345	Software Testing and Validation	4.00
COEN 346	Operating Systems	4.00
COEN 352	Data Structures and Algorithms	3 .00
COEN 421	Embedded Systems and Software Design	4.00
COEN 432	Applied Genetic and Evolutionary Systems	3 .00
SOEN 341	Software Process	3 .00
SOEN 342	Software Requirements and Specifications	3.00
SOEN 343	Software Architecture and Design I	3 .00

C. Electronics/VLSI

- a) ELEC 312 Electronics II (4.00) was **removed** from topics Electronics/VLSI elective listing.

COEN 315	Digital Electronics	3 .50
COEN 413	Hardware Functional Verification	3.00
COEN 451	VLSI Circuit Design	4.00
ELEC 421	Solid State Devices	3 .50
ELEC 422	Design of Integrated Circuit Components	3 .50
ELEC 423	Introduction to Analog VLSI	4.00
ELEC 424	VLSI Process Technology	3 .50
ELEC 425	Optical Devices for High-Speed Communications	3 .50

D. Power

No changes to Technical Electives in option D.

ELEC 430	Electrical Power Equipment*	3 .50
ELEC 431	Electrical Power Systems	3 .50
ELEC 432	Control of Electrical Power Conversion Systems*	3 .50
ELEC 433	Power Electronics	3 .50
ELEC 434	Behaviour of Power Systems*	3 .50
ELEC 435	Electromechanical Energy Conversion Systems	3 .50
ELEC 436	Protection of Power Systems*	3 .50
ELEC 437	Renewable Energy Systems	3 .00
ELEC 438	Industrial Electrical Systems*	3 .50
ELEC 439	Hybrid Electric Vehicle Power System Design and Control	3 .00
ELEC 440	Controlled Electric Drives	3 .50

E. Control systems and Avionics

No changes to Technical Electives in option E.

AERO 417	Standards, Regulations, and Certification	3.00
AERO 480	Flight Control Systems	3 .50
AERO 482	Avionic Navigation Systems	3 .00
AERO 483	Integration of Avionics Systems	3 .00
ELEC 481	Linear Systems	3 .50
ELEC 482	System Optimization	3 .50
ELEC 483	Real-Time Computer Control Systems	3 .50
ENGR 472	Robot Manipulators	3 .50

F. Waves and Electromagnetics

No changes to Technical Electives in option F.

Prepared by the Office of the Dean, Faculty of Engineering and Computer Science May 2015.

ELEC 453 Microwave Engineering 3 .50
ELEC 455 Acoustics 3 .00
ELEC 456 Antennas 3 .50
ELEC 457 Design of Wireless RF Systems 3 .00
ELEC 458 Techniques in Electromagnetic Compatibility 3 .00

G. Other

No changes to Technical Electives in option G.

ELEC 498 Topics in Electrical Engineering 3 .00
ENGR 411 Special Technical Report 1 .00