



(2013)

<p><b>1.0 Degree Title</b> Specify the two degrees for concurrent degree programs</p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Major Software Engineering</div> <p><b>1.1 Major (Legacy= Subject) (30-char. max.)</b></p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">B.Sc.</div> <p><b>1.2 Concentration (Legacy = Concentration/Option)</b> If applicable (30 char. max.)</p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Software Engineering</div> <p><b>1.3 Minor (with Concentration, if applicable)</b> (30 char. max.)</p> <div style="border: 1px solid black; height: 20px; margin-bottom: 5px;"></div> <p><b>1.4 Category</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Faculty Program (FP)  <input checked="" type="checkbox"/> Major  <input type="checkbox"/> Joint Major  <input type="checkbox"/> Major Concentration (CON)  <input type="checkbox"/> Minor  <input type="checkbox"/> Minor Concentration (CON)         </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Honours (HON)  <input type="checkbox"/> Joint Honours Component (HC)  <input type="checkbox"/> Internship/Co-op  <input type="checkbox"/> Thesis (T)  <input type="checkbox"/> Non-Thesis (N)  <input type="checkbox"/> Other            Please specify  <div style="border: 1px solid black; height: 20px; margin-top: 5px;"></div> </td> </tr> </table> <p><b>1.5 Complete Program Title</b></p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Major Software Engineering</div>	<input type="checkbox"/> Faculty Program (FP) <input checked="" type="checkbox"/> Major <input type="checkbox"/> Joint Major <input type="checkbox"/> Major Concentration (CON) <input type="checkbox"/> Minor <input type="checkbox"/> Minor Concentration (CON)	<input type="checkbox"/> Honours (HON) <input type="checkbox"/> Joint Honours Component (HC) <input type="checkbox"/> Internship/Co-op <input type="checkbox"/> Thesis (T) <input type="checkbox"/> Non-Thesis (N) <input type="checkbox"/> Other Please specify <div style="border: 1px solid black; height: 20px; margin-top: 5px;"></div>	<p><b>2.0 Administering Faculty/Unit</b></p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Science</div> <p><b>Offering Faculty/Department</b></p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Science / Computer Science</div> <p><b>3.0 Effective Term of revision or retirement</b> Please give reasons in 5.0 "Rationale" in the case of retirement (Ex. Sept. 2004 = 200409)      <input type="checkbox"/> Retirement</p> <p>Term: <div style="border: 1px solid black; padding: 2px; display: inline-block;">201409</div></p> <p><b>4.0 Existing Credit Weight</b>      <b>Proposed Credit Weight</b></p> <div style="display: flex; justify-content: space-between; margin-bottom: 5px;"> <div style="border: 1px solid black; padding: 2px; width: 45%;">60-63</div> <div style="border: 1px solid black; width: 45%;"></div> </div> <p><b>5.0 Rationale for revised program</b></p> <div style="border: 1px solid black; padding: 5px; min-height: 100px;"> <p>This new course ECSE 539 Software Language Engineering is definitely of interest for our students in Software Engineering programs as well as our larger Computer Science programs.</p> </div>
<input type="checkbox"/> Faculty Program (FP) <input checked="" type="checkbox"/> Major <input type="checkbox"/> Joint Major <input type="checkbox"/> Major Concentration (CON) <input type="checkbox"/> Minor <input type="checkbox"/> Minor Concentration (CON)	<input type="checkbox"/> Honours (HON) <input type="checkbox"/> Joint Honours Component (HC) <input type="checkbox"/> Internship/Co-op <input type="checkbox"/> Thesis (T) <input type="checkbox"/> Non-Thesis (N) <input type="checkbox"/> Other Please specify <div style="border: 1px solid black; height: 20px; margin-top: 5px;"></div>		
<p><b>6.0 Revised Program Description (Maximum 150 words)</b></p> <div style="border: 1px solid black; height: 200px; margin-top: 10px;"></div>			

## 7.0 List of existing program and proposed program

Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

### Required Courses (36-39 credits)

COMP 202 (3) Foundations of Programming\*  
COMP 250 (3) Intro to Computer Science  
COMP 251 (3) Algorithms & Data Structures  
COMP 206 (3) Intro to Software Systems  
COMP 273 (3) Intro to Computer Systems  
COMP 302 (3) Programming Languages & Paradigms  
COMP 303 (3) Software Development  
COMP 310 (3) Operating Systems  
**Or** ECSE 427 (3) Operating Systems  
COMP 361 D1 (3) Software Engineering Project  
COMP 361 D2 (3) Software Engineering Project  
ECSE 429 (3) Software Validation  
MATH 223 (3) Linear Algebra  
MATH 240 (3) Discrete Structures 1

(\*Students who have sufficient knowledge in programming language are not required to take COMP 202)

### Complementary Courses (33 credits)

At least 9 credits selected from Groups A and B, with at least 3 credits selected from each:

\*Students who have successfully completed MATH 150 & MATH 151 are not required to take MATH 222.

#### Group A:

MATH 222 (3) Calculus 3\*  
MATH 323 (3) Probability  
MATH 324 (3) Statistics

#### Group B:

COMP 330 (3) Theory of Computation  
COMP 360 (3) Algorithm Design

At least 15 credits selected from the following, with at least 6 credits selected from Software Engineering Specializations, and at least 6 credits from Application Specialties.

### Software Engineering Specializations

COMP 409 (3) Concurrent Programming  
**Or** ECSE 420 (3) Parallel Computing  
COMP 523 (3) Language-based Security  
COMP 525 (3) Formal Verification  
COMP 529 (4) Software Architecture  
COMP 533 (3) Object-oriented Software Development

### Applications Specialties

COMP 350 (3) Numerical Computing  
COMP 417 (3) Introduction to Robotics & Intelligent Systems  
COMP 421 (3) Database Systems  
COMP 424 (3) Artificial Intelligence  
COMP 512 (4) Distributed Systems  
COMP 520 (4) Compiler Design  
COMP 521 (4) Modern Computer Games  
COMP 522 (4) Modelling and Simulation  
COMP 535 (3) Computer Networks 1  
COMP 557 (3) Fundamentals of Computer Graphics  
**Or** ECSE 532 (3) Computer Graphics  
COMP 558 (3) Fundamentals of Computer Vision  
ECSE 424 (3) Human-Computer Interaction

Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

### Required Courses (36-39 credits)

COMP 202 (3) Foundations of Programming\*  
COMP 250 (3) Intro to Computer Science  
COMP 251 (3) Algorithms & Data Structures  
COMP 206 (3) Intro to Software Systems  
COMP 273 (3) Intro to Computer Systems  
COMP 302 (3) Programming Languages & Paradigms  
COMP 303 (3) Software Development  
COMP 310 (3) Operating Systems  
**Or** ECSE 427 (3) Operating Systems  
COMP 361 D1 (3) Software Engineering Project  
COMP 361 D2 (3) Software Engineering Project  
ECSE 429 (3) Software Validation  
MATH 223 (3) Linear Algebra  
MATH 240 (3) Discrete Structures 1

(\*Students who have sufficient knowledge in programming language are not required to take COMP 202)

### Complementary Courses (33 credits)

At least 9 credits selected from Groups A and B, with at least 3 credits selected from each:

\*Students who have successfully completed MATH 150 & MATH 151 are not required to take MATH 222.

#### Group A:

MATH 222 (3) Calculus 3\*  
MATH 323 (3) Probability  
MATH 324 (3) Statistics

#### Group B:

COMP 330 (3) Theory of Computation  
COMP 360 (3) Algorithm Design

At least 18 credits selected from the following, with at least 6 credits selected from Software Engineering Specializations, and at least 9 credits from Application Specialties.

### Software Engineering Specializations

COMP 409 (3) Concurrent Programming  
**Or** ECSE 420 (3) Parallel Computing  
COMP 523 (3) Language-based Security  
COMP 525 (3) Formal Verification  
COMP 529 (4) Software Architecture  
COMP 533 (3) Object-oriented Software Development  
**ECSE 539 (3) Software Language Engineering**

### Applications Specialties

COMP 350 (3) Numerical Computing  
COMP 417 (3) Introduction to Robotics & Intelligent Systems  
COMP 421 (3) Database Systems  
COMP 424 (3) Artificial Intelligence  
COMP 512 (4) Distributed Systems  
COMP 520 (4) Compiler Design  
COMP 521 (4) Modern Computer Games  
COMP 522 (4) Modelling and Simulation  
COMP 535 (3) Computer Networks 1  
COMP 557 (3) Fundamentals of Computer Graphics  
**Or** ECSE 532 (3) Computer Graphics  
COMP 558 (3) Fundamentals of Computer Vision  
ECSE 424 (3) Human-Computer Interaction

8.0 Consultation with Related Units <input type="checkbox"/> Yes <input type="checkbox"/> No	Financial Consult <input type="checkbox"/> Yes <input type="checkbox"/> No
Attach list of consultations	

<b>9. Approvals</b>			
Routing Sequence	Name	Signature	Date
Department	<input type="text"/>	<input type="text"/>	<input type="text"/>
Curric/Acad Committee	<input type="text"/>	<input type="text"/>	<input type="text"/>
Faculty 1	<input type="text"/>	<input type="text"/>	<input type="text"/>
Faculty 2	<input type="text"/>	<input type="text"/>	<input type="text"/>
Faculty 3	<input type="text"/>	<input type="text"/>	<input type="text"/>
CGPS	<input type="text"/>	<input type="text"/>	<input type="text"/>
SCTP	<input type="text"/>	<input type="text"/>	<input type="text"/>
APC	<input type="text"/>	<input type="text"/>	<input type="text"/>
Senate	<input type="text"/>	<input type="text"/>	<input type="text"/>
Submitted by			
Name	<input type="text" value="Bettina Kemme / Liette Oi Chin"/>	To be completed by ARR:	
Phone	<input type="text" value="514 398-7071 x 00118"/>	CIP Code	
Email	<input type="text" value="liette.chin@mcgill.ca"/>	<input style="width: 100%;" type="text"/>	
Submission Date	<input type="text" value="July 17, 2016"/>		

10. FQRSC (Research) Indicator (for GPS): Yes    No