

# OFFICE OF THE ASSOCIATE VICE-PRESIDENT, ACADEMIC

8888 University Drive.

TEL: 778.782.4636

avpcio@sfu.ca

Burnaby, BC

FAX: 778.782.5876

www.sfu.ca/vpacademic

Canada V5A 1S6

MEMORANDUM

ATTENTION

Senate

DATE

March 4, 2016

FROM

RE:

Mark Lechner, Acting Chair

PAGES

Senate Committee on

Undergraduate Studies Faculty of Applied Sciences (SCUS 16-10)

# For information:

Acting under delegated authority at its meeting of March 3, 2016 SCUS approved the following curriculum revisions effective Fall 2016.

- 1. School of Mechatronic Systems Engineering (SCUS 16-10a)
  - (i) Prerequisite change for MSE 410 (effective Spring 2017)
- 2. School of Computing Science (SCUS 16-10b)
  - (i) Requirement changes to the Computing Science Honours, Major and Second Degree programs
  - (ii) New Course Proposal: CMPT 129-3, Introduction to Computing Science and Programming for Mathematics and Statistics (effective Spring 2017)
  - (iii) Q Designation for CMPT 129
  - (iv) Prerequisite change for CMPT 225, 470
  - (v) Description change for CMPT 125, 128 and 135



# FACULTY OF APPLIED SCIENCES

OFFICE OF THE DEAN 8888 University Drive, Burnaby, BC

Canada V5A 1S6

TEL: 778.782.4724

FAX: 778.782.5802

www.fas.sfu.ca

MEMORANDUM

ATTENTION Senate Committee on Undergraduate Studies

DATE

February 18, 2016

FROM

Ed Park, Associate Dean

**PAGES** 

RE:

Curriculum Changes

The following changes have been approved by the FAS Undergraduate Curriculum Committee and are appended here for approval by SCUS and recommendation to Senate.

- 1.) School of Mechatronic Systems Engineering
  - a. Calendar Change
    - Changes to 12 unit rule
  - b. Course Pre-requisite Change
    - MSE 410
- 2.) School of Computing Science
  - a. Calendar Changes (related to removal of CMPT 320) (plus supporting documentation re CMNS 353)
    - Computing Science Honours Program
    - Computing Science Major Program
    - Computing Science Second Degree Program
  - b. New Course Proposal
    - CMPT 129 New Course Proposal (plus syllabus, Q designation memo, Library approval)
  - c. Course Pre-requisite Changes
    - CMPT 225 (related to creation of CMPT 129)
    - CMPT 470
  - d. Course Description Changes (related to creation of CMPT 129)
    - CMPT 125
    - CMPT 128
    - CMPT 135

Thank you,

Edward Park Associate Dean (EP/mt)

# EXISTING COURSE CHANGE FORM

Page 1 of 3



**COURSE SUBJECT** 

MSE

NUMBER

410

TITLE

Capstone Design Technical Project I

# INSTRUCTIONS (OVERALL):

- 1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
- 2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
- 3. Indicate term = Fall, Spring, Summer

# TYPE OF CHANGES RECOMMENDED

Please type 'X' for the appropriate revision(s):

	Course number	Credit	Title	Description	X	Prerequisite		Deletion	
--	---------------	--------	-------	-------------	---	--------------	--	----------	--

## WORDING/DESCRIPTION EDITS

- 1. Indicate deleted or changed text using strikethrough.
- 2. Indicate added or new text using underline.
- 3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

Prerequisite: 100 units and completion of two coop terms (MSE 293/294 and MSE 394).

#### SAMPLE

POL 223 Canadian-American Political Economy (3)

An introductory study of America's Canada's political economy, stressing the interrelated nature of Canada's economic and political life. The course Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

This course is identical to CNS 280 and students cannot take both courses for credit.

Students with credit for CNS 280 cannot take POL 223 for further credit.

Recommended-Pre-requisite: POL 100 or 101W.

Breadth - Social Sciences.

#### RATIONALE

If more space is needed, please use the provided text box on page 2 of this document

MSE students are required to complete 3 co-op terms before graduation. However, it has been noted that many of our students skip co-op terms and there are many students in their fourth year without any co-op. In addition, completion of co-op training gives students insight and industrial background knowledge to perform better in their Capstone Design Project course.

EFFECTIVE TERM AND YEAR, FOR CHANGES
SPRING 2017

**Revision to Computing Science Honours Program** 

John Edgar

February 2016

# Description

- 1. Remove CMPT 320 (or CMNS 353) as a requirement of the Bachelor of Science credential
- 2. Add CMPT 376W as a requirement for all credentials of the Honours program.

#### Rationale

- CMPT 320 (Social Implications of a Computerized Society) is currently one of five required 300 level courses for the B.Sc. credential. These courses tend to act as a bottleneck for students and there has been difficulty staffing CMPT 320. Social and Professional issues in Computing (SP) are considered important for our curriculum so are to be added to the syllabus of two other courses, CMPT 125 and CMPT 376W. CMPT 320 will remain as an elective course.
- 2. As noted above SP content is to be added to the curriculum of CMPT 125 and CMPT 376W. This will allow students to encounter this material twice and at different stages in the completion of their degree. CMPT 125 is a requirement of the major. CMPT 376W is currently nearly, but not quite, a de facto requirement as it is one of only two CMPT upper division W courses, with the other (CMPT 322) being offered only on the Surrey campus.

# **Program Requirements**

# **Upper Division Requirements**

Consult an Applied Sciences Advisor before commencing upper division requirements.

Students are required to bring the total upper division units in CMPT/MACM courses to at least 50 units within the minimum of 60 upper division units, and an overall total of 132 units are required for the degree, together with a graduation grade point average of at least 3.00.

Students must complete CMPT 376W - Technical Writing and Group Dynamics (3).

#### **Elective Courses**

In addition to the courses listed above, students should consult an Applied Sciences Advisor to plan the remaining required elective courses.

# **Breadth Requirement**

One course in each of the six areas of Table I is required. These courses must include

```
CMPT 300 - Operating Systems I (3)
CMPT 307 - Data Structures and Algorithms (3)
CMPT 354 - Database Systems I (3)
```

# **Depth Requirement**

Eighteen units of additional CMPT courses numbered CMPT 300 or above must be completed, at least twelve of which must be numbered 400 or above.

These eighteen units must include CMPT 405; at least one other course in the theoretical computing science concentration; and, unless given special permission, cannot include CMPT 415, 416 and 498.

In addition, six units of research courses are required including both of

```
CMPT 415 - Special Research Projects (3)
CMPT 416 - Special Research Projects (3)
or
```

CMPT 498 - Honours Research Project (6)

#### **BSc Credential**

For a BSc computing science degree, the following additional requirements must be met.

• two additional courses chosen from Table I, II or III

```
MACM 316 - Numerical Analysis I (3)
```

#### and one of

```
CMPT 320 - Social Implications - Computerized Society (3)
CMNS 353 - Topics in Technology and Society (4)
```

Other courses may be approved on submission of a detailed course outline to the school.

**Revision to Computing Science Major Program** 

John Edgar

February 2016

# Description

- 1. Remove CMPT 320 (or CMNS 353) as a requirement of the Bachelor of Science credential note that the sentence beginning "Other courses may be approved ..." relates to this choice and should not have been in the B.Ed. section.
- 2. Add CMPT 376W as a requirement for all credentials of the Major program.

#### Rationale

- CMPT 320 (Social Implications of a Computerized Society) is currently one of four required 300 level courses for the B.Sc. credential. These courses tend to act as a bottleneck for students and there has been difficulty staffing CMPT 320. Social and Professional issues in Computing (SP) are considered important for our curriculum so are to be added to the syllabus of two other courses, CMPT 125 and CMPT 376W. CMPT 320 will remain as an elective course.
- 2. As noted above SP content is to be added to the curriculum of CMPT 125 and CMPT 376W. This will allow students to encounter this material twice and at different stages in the completion of their degree. CMPT 125 is a requirement of the major. CMPT 376W is currently nearly, but not quite, a de facto requirement as it is one of only two CMPT upper division W courses, with the other (CMPT 322) being offered only on the Surrey campus.

# **Program Requirements**

# **Upper Division Requirements**

Students complete at least 45 upper division units-including

CMPT 376W - Technical Writing and Group Dynamics (3)

Students should consult an academic advisor before commencing upper division requirements.

#### **Elective Courses**

In addition to the courses listed above, students should consult an academic advisor to plan the remaining required elective courses.

# **Breadth Requirement**

Five courses from five of the six Table I areas of concentration (see below) must be completed including both of

```
CMPT 300 - Operating Systems I (3)
CMPT 307 - Data Structures and Algorithms (3)
```

CMPT 354 is also recommended.

# **Depth Requirement**

Twelve units of additional CMPT courses numbered CMPT 400 or above must be completed (excluding CMPT 415, 416 and 498, which may be included by special permission).

#### **BSc Credential**

For a BSc computing science degree, the following additional requirements must be met.

two additional courses chosen from Table I, Table II or Table III

MACM 316 - Numerical Analysis I (3)

# and one of

```
CMPT 320 - Social Implications - Computerized Society (3)
CMNS 353 - Topics in Technology and Society (4)
```

#### **BEd Credential**

Other courses may be approved on submission of a detailed course outline to the school.

For a major in computing science in conjunction with a BEd program as offered by the Faculty of Education, one additional CMPT course chosen from Table I or Table II must be completed, to total at least 30 upper division units in CMPT courses.

#### **BA Credential**

For a BA computing science degree within the Faculty of Applied Sciences, the following additional requirements must be met.

one additional CMPT upper division course chosen from Table I or Table II must be completed bringing the total upper division units in CMPT courses to a minimum of 30 units.

a concentration of 15 units in a Faculty of Arts and Social Sciences discipline (department) including at least six units of upper division credit.

# **Revision to Computing Science Second Degree Program**

John Edgar

August 2015

# Description

- 1. Remove CMPT 320 (or CMNS 353) as a requirement of the Bachelor of Science credential
- 2. Add CMPT 376W as a requirement for all credentials of the Second Degree program.

#### Rationale

- CMPT 320 (Social Implications of a Computerized Society) is currently one of four required 300 level courses for the B.Sc. credential. These courses tend to act as a bottleneck for students and there has been difficulty staffing CMPT 320. Social and Professional issues in Computing (SP) are considered important for our curriculum so are to be added to the syllabus of two other courses, CMPT 125 and CMPT 376W. CMPT 320 will remain as an elective course.
- 2. As noted above SP content is to be added to the curriculum of CMPT 125 and CMPT 376W. This will allow students to encounter this material twice and at different stages in the completion of their degree. CMPT 125 is a requirement of the major. CMPT 376W is currently nearly, but not quite, a de facto requirement as it is one of only two CMPT upper division W courses, with the other (CMPT 322) being offered only on the Surrey campus.

# **Program Requirements**

# **Upper Division Requirements**

In accord with University regulations, this second degree program consists of the upper division requirements of the program as described below.

Students must complete CMPT 376W - Technical Writing and Group Dynamics (3).

# **Breadth Requirement**

Five courses from five of the six Table I areas of concentration must be completed including both of

CMPT 300 - Operating Systems I (3) CMPT 307 - Data Structures and Algorithms (3)

CMPT 354 is also recommended.

# **Depth Requirement**

Twelve units of additional CMPT courses numbered CMPT 400 or above must be completed (excluding CMPT 415, 416 and 498, which may be included by special permission).

#### **BSc Credential**

For a BSc computing science degree, the following additional requirements must be met. two additional courses chosen from Table I, Table II or Table III

MACM 316 - Numerical Analysis I (3)

#### and one of

CMPT 320 - Social Implications - Computerized Society (3) CMNS 353 - Topics in Technology and Society (4)

# **BA Credential**

For a BA computing science degree within the Faculty of Applied Sciences, the following additional requirements must be met.

one additional CMPT upper division course chosen from Table I or Table II must be completed bringing the total upper division units in CMPT courses to a minimum of 30 units.

a concentration of 15 units in a Faculty of Arts and Social Sciences discipline (department) including at least six units of upper division credit.



NEW COURSE PROPOSAL

1 OF 4 PAGES

COURSE SUBJECT	СМРТ	NUMBER	129					
COURSE TITLE LONG — for Calenda	r/schedule, no more than 100 characters in	cluding spaces and pu	ınctuation					
Introduction to C	omputing Science and Programr	ning for Mathem	natics and Statistic	cs				
AND SHORT — for enrolln	nent/transcript, no more than 30 characters	including spaces and	punctuation					
Intro. to CS for M	1aths							
CAMPUS where cours	e will be normally taught:   Burnaby	Surrey	Vancouver	Great North	ern Way Off campus			
COURSE DESCRIPTI	ON (FOR CALENDAR). 50 WORDS MAX	IMUM. ATTACH A C	OURSE OUTLINE TO	THIS PRO	POSAL			
A second course in computing science and programming intended for students studying mathematics, statistics or actuarial science and suitable for students who already have some background in computing science and programming. Topics include: a review of the basic elements of programming; use and implementation of elementary data structures and algorithms; fundamental algorithms and problem solving; basic object-oriented programming and software design; computation and computability and specification and program correctness.								
REPEAT FOR CREDIT	YES NO How many time	es? [ Witl	hin a term? YES	NO				
committed for necessar	roved (S.93-11) that no new course should y library materials. Each new course propos ation that funding arrangements have been a	sal must be accompan	e until funding has beer ied by a library report a	n nd,				
Library report status, se	e lib.sfu.ca/collections/course-assessments	Approved						
	RODUCTION OF THIS COURSE , please use the provided text box on page 4	4 of this document						
The course is a second introductory programming and computing science course for mathematicians, statisticians and actuarial scientists. With the introduction of CMPT 127, Computing Laboratory, to the CS major program the CMPT first year curriculum consists of a three course sequence (CMPT 120, CMPT 125 and CMPT 127). It is not considered reasonable to expect non-major students who need additional computing science experience to take three CMPT courses in their first year.  The addition of a dedicated course allows a focus on examples and problems of relevance to								
mathematicians.		ao on oxampioc	and problems of	rolovani	50 10			
	NROLLMENT INFORMATION would first be offered (e.g. FALL 2014)	Spring 2017						
Term(s) in which cou	rse will typically be offered Spring  Other (descri		Fall					
Will this be a required of	or elective course in the curriculum?	Required E	lective					
What is the probable en	arollment when offered? Estimate:	60						



# NEW COURSE PROPOSAL 2 OF 4 PAGES

UNITS
Indicate number of units: 3
Indicate no. of contact hours for: 3 Lecture 0 Seminar 0 Tutorial 0 Lab 1 Other – please explain
OTHER
FACULTY Which of your present CFL faculty have the expertise to offer this course?
Most present faculty could teach this course.
WOD DECIDIATION ( ) 1 C C C C C C C C C C C C C C C C C C
WQB DESIGNATION (attach approval from Curriculum Office)
Q
PREREQUISITE AND / OR COREQUISITE
CMPT 120
EQUIVALENT COURSES
Does this course replicate the content of a previously-approved course to such an extent that students should not receive credit for both courses?
CMPT 125, CMPT 128, CMPT 135
COURSE LEVEL EDUCATIONAL COALS (OPTIONAL)
COURSE - LEVEL EDUCATIONAL GOALS (OPTIONAL)
FEES
Are there any proposed student fees associated with this course other than tuition fees?  YES NO



NEW COURSE PROPOSAL
3 OF 4 PAGES

# **RESOURCES**

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

None	
None	
OTHER IMPLICATIONS	
Final Exam required:	YES NO
Criminal Record Check required:	YES NO
OVERLAP CHECK	
Checking for overlap is the responsi	blity of the Associate Dean.
Each new course proposal must have	e confirmation of an overlap check completed prior to submission to the Faculty Curriculum Committee.
Name of Originator	
John Edgar	



8888 University Drive, Burnaby, BC Canada V5A 1S6

University Curriculum & Institutional Liaison

TEL: 778.782.3312 FAX: 778.782.5876

slrhodes@sfu.ca www.sfu.ca/ugcr

MEMORANDUM -

**ATTENTION** 

Ed Park, Associate Dean, FAS

DATE

February 4, 2016

FROM

Susan Rhodes, Director

1

PAGES

RE:

CMPT Q designation approval

The University Curriculum Office has approved Q designation for the following new Computing Science course, effective Fall 2016 (1167):

CMPT 129-3 Introduction to Computing Science and Programming for Mathematics and Statistics

Please forward this memo to your Faculty UCC and then on to SCUS for further approval.

cc: John Edgar, UGC Chair, School of Computing Science



**CMPT** 

NUMBER

225

TITLE

Data Structures and Programming

### INSTRUCTIONS (OVERALL):

- 1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
- 2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
- 3. Indicate term = Fall, Spring, Summer

## TYPE OF CHANGES RECOMMENDED

Please type 'X' for the appropriate revision(s):

Course number	Credit	Title	Description	x	Prerequisite	Deletion
				21	1 TOTO GOLDE	Deletion

# WORDING/DESCRIPTION EDITS

- 1. Indicate deleted or changed text using strikethrough.
- 2. Indicate added or new text using underline.
- 3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

(MACM 101 and either ((CMPT 125 and 127), CMPT 129 or CMPT 135)) or (ENSC 251 and ENSC 252).

#### SAMPLE

POL 223 Canadian-American Political Economy (3)

An introductory study of America's Ganada's political economy, stressing the interrelated nature of Canada's economic and political life. The course-Eocuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

This course is identical to CNS 280 and students cannot take both courses for credit.

Students with credit for CNS 280 cannot take POL 223 for further credit,

Recommended-Pre-requisite: POL 100 or 101W.

Breadth - Social Sciences.

# **RATIONALE**

If more space is needed, please use the provided text box on page 2 of this document

CMPT 129 is a new course and is intended as a possible route into CMPT 225 for Maths students.

# EFFECTIVE TERM AND YEAR, FOR CHANGES

Fall	2016		



**CMPT** 

NUMBER

470

TITLE

Web Based Information Systems

## INSTRUCTIONS (OVERALL):

- 1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
- 2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
- 3. Indicate term = Fall, Spring, Summer

#### TYPE OF CHANGES RECOMMENDED

Please type 'X' for the appropriate revision(s):

	Course number	Credit	Title	Description	x	Prerequisite	Deletion
--	---------------	--------	-------	-------------	---	--------------	----------

## WORDING/DESCRIPTION EDITS

- 1. Indicate deleted or changed text using strikethrough.
- 2. Indicate added or new text using underline.

(CMPT 275 or CMPT 276) and CMPT 354

- 3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

ı		
ı		
	*	
ı		
ı		
ı		
ı		
ı		
ı		
ı		
ı		
ı		
ı		
ı		
ı		
١		
ı		
ı		
ı		
ı		
ı		
ı		
ı		
ı		
ı		
ı		
١		

#### SAMPLE

POL 223 Canadian-American Political Economy (3)

An introductory study of America's Canada's political economy, stressing the interrelated nature of Canada's economic and political life. The course-Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

This course is identical to CNS 280 and students cannot take both courses for credit.

Students with credit for CNS 280 cannot take POL 223 for further credit.

Recommended-Pre-requisite: POL 100 or 101W.

Breadth - Social Sciences.

#### **RATIONALE**

If more space is needed, please use the provided text box on page 2 of this document

CMPT 470 involves a group project and students are expected to be able to collaborate to produce software. CMPT 275 (and 276) are Software Engineering courses with a substantial project. While the majority of students who take CMPT 470 have already taken CMPT 275 or CMPT 276 a few students have not.

# EFFECTIVE TERM AND YEAR, FOR CHANGES

Fall	2016			
гап	2010			



**CMPT** 

NUMBER

125

TITLE

Introduction to Computing Science and Programming II

# INSTRUCTIONS (OVERALL):

- 1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
- 2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
- 3. Indicate term = Fall, Spring, Summer

# TYPE OF CHANGES RECOMMENDED

Please type 'X' for the appropriate revision(s):

	Course number	Credit	Title	X	Description	Prerequisite	Deletion
--	---------------	--------	-------	---	-------------	--------------	----------

## WORDING/DESCRIPTION EDITS

- 1. Indicate deleted or changed text using strikethrough.
- 2. Indicate added or new text using underline.
- 3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

A rigorous introduction to computing science and computer programming, suitable for students who already have some background in computing science and programming. Intended for students who will major in computing science or a related program. Topics include: fundamental algorithms; elements of empirical and theoretical algorithmics; abstract data types and elementary data structures; basic object-oriented programming and software design; computation and computability; specification and program correctness; and history of computing science. Students with credit for CMPT 126, 129, 135 or CMPT 200 or higher may not take for further credit.

#### SAMPLE

POL 223 Canadian-American Political Economy (3)

An introductory study of America's Canada's political economy, stressing the interrelated nature of Canada's economic and political life. The course-Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

This course is identical to CNS 280 and students cannot take both courses for credit.

Students with credit for CNS 280 cannot take POL 223 for further credit.

Recommended-Pre-requisite: POL 100 or 101W.

Breadth - Social Sciences.

#### **RATIONALE**

If more space is needed, please use the provided text box on page 2 of this document

CMPT 129 is a new, e	quivalent, course.
----------------------	--------------------

#### EFFECTIVE TERM AND YEAR, FOR CHANGES

Fall	2016		
1 411	2010		



**CMPT** 

NUMBER

128

TITLE

Introduction to Computing Science and Programming for Engineers

#### INSTRUCTIONS (OVERALL):

- 1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
- 2. Rationale must be included. If more space is needed than provided below, please use the provided text box on page 2 of this document.
- 3. Indicate term = Fall, Spring, Summer

#### TYPE OF CHANGES RECOMMENDED

Please type 'X' for the appropriate revision(s):

Course number	Credit	Title	X	Description	Prerequisite	Deletion
---------------	--------	-------	---	-------------	--------------	----------

# WORDING/DESCRIPTION EDITS

- 1. Indicate deleted or changed text using strikethrough.
- 2. Indicate added or new text using underline.
- 3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

An introduction to computing science and computer programming, suitable for students wishing to major in Engineering Science or a related program. This course introduces basic computing science concepts, and fundamentals of object oriented programming. Topics include: fundamental algorithms and problem solving; abstract data types and elementary data structures; basic object-oriented programming and software design; elements of empirical and theoretical algorithmics; computation and computability; specification and program correctness; and history of computing science. The course will use a programming language commonly used in Engineering Science. Students with credit for CMPT 125, 126, 129, 130 or CMPT 200 or higher may not take for further credit.

#### SAMPLE

POL 223 Canadian-American Political Economy (3)

An introductory study of America's Canada's political economy, stressing the interrelated nature of Canada's economic and political life. The course Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

This course is identical to CNS 280 and students cannot take both courses for credit.

Students with credit for CNS 280 cannot take POL 223 for further credit.

Recommended-Pre-requisite: POL 100 or 101W.

Breadth - Social Sciences.

#### **RATIONALE**

If more space is needed, please use the provided text box on page 2 of this document

CMP'	F 129	is a	new,	equival	ent,	course.
------	-------	------	------	---------	------	---------

# EFFECTIVE TERM AND YEAR, FOR CHANGES

Fall	2016			
I all	2010			

# SENATE COMMITTEE ON UNDERGRADUATE STUDIES

# EXISTING COURSE CHANGE FORM

Page 1 of 2

**COURSE SUBJECT** 

**CMPT** 

**NUMBER** 

135

Introduction to Computer TITLE Programming II

# INSTRUCTIONS (OVERALL):

- 1. Using Microsoft Word draft changes using the following guideline. Paste in box below.
- 2. Rationale must be included. If more space is needed than provided below, please use the provided text box
- 3. Indicate term = Fall, Spring, Summer

# TYPE OF CHANGES RECOMMENDED

Please type 'X' for the appropriate revision(s):

Credit	Title		Description		
aroure	TILL	X	Description	Prerequisite	Deletio
	Credit	Credit Title	Credit Title x	Credit Title x Description	Credit Title x Description Prerequisite

# WORDING/DESCRIPTION EDITS

- 1. Indicate deleted or changed text using strikethrough.
- 2. Indicate added or new text using underline.
- 3. Equivalent courses: preclusion statement should read:
  - a. Students with credit for x cannot take y for further credit.

A second course in systems-oriented programming and computing science that builds upon the foundation set in CMPT 130 using a systems-oriented language such as C or C++. Topics: a review of the basic elements of programming; introduction to object-oriented programming (OOP); techniques for designing and testing programs; use and implementation of elementary data structures and algorithms; introduction to embedded systems programming. Students with credit for CMPT 125, or 126, or 129 may not take this course for further credit.

#### SAMPLE

POL 223 Canadian-American Political Economy (3)

An introductory study of America's Canada's political economy, stressing the interrelated nature of Canada's economic and political life. The course Focuses on current economic problems and policies, taking into account the geographical, historical and political environments. Topics include the resource and industrial structures, research and development, the public sector, fiscal and monetary policy, the role of the state, trade and foreign ownership, energy, regional disparity, corporate concentration and the political economy of federalism.

This course is identical to CNS 280 and students cannot take both courses for credit.

Students with credit for CNS 280 cannot take POL 223 for further credit.

Recommended Pre-requisite: POL 100 or 101W.

Breadth - Social Sciences.

#### RATIONALE

If more space is needed, please use the provided text box on page 2 of this document

CMPT	129	is	a	new,	equiva	lent,	course.

# EFFECTIVE TERM AND YEAR, FOR CHANGES

Fall, Spring, Summer and year (please enter in textbox)

Fall	2016	

January 2015