S.19-85



## GRADUATE AND POSTDOCTORAL STUDIES

Simon Fraser University Maggie Benston Centre 1100 8888 University Drive Burnaby, BC V5A 1S6 TEL 778.782.3042 FAX 778.782.3080 gradstudies@sfu.ca www.sfu.ca/grad

#### 

New Course Proposals

June 20, 2019 mul

## For information:

RE:

Acting under delegated authority at its meeting of June 20, 2019, SGSC approved the following curriculum items, effective **Spring 2020**:

## **Faculty of Applied Sciences**

- 1) New course: CMPT 631 Industrial Internship
- 2) New course: ENSC 704 Industrial Internship
- 3) New course: MSE 795 Industrial Internship

## School of Computing Science

- 4) New course: CMPT 712 Approximation and Randomized Algorithms
- 5) New course: CMPT 720 Robotic Autonomy: Algorithms and Computation
- 6) New course: CMPT 727 Statistical Machine Learning
- 7) New course: CMPT 762 Computer Vision
- 8) New course: CMPT 763 Biomedical Computer Vision
- 9) New course: CMPT 766 Computer Animation and Simulation
- 10) New course: CMPT 770 Parallel & Distributed Computing

## Faculty of Arts and Social Sciences

## Department of Urban Studies

- 11) New course: URB 601 Urban Professional Development I
- 12) New course: URB 602 Urban Professional Development II

## Faculty of Communications, Art and Technology

13) New course: CMNS 835 Communication and Cultural Policies, Power and Governance

Senators wishing to consult a more detailed report of curriculum revisions may do so on the Senate Docushare repository at <u>https://docushare.sfu.ca/dsweb/View/Collection-12682</u>

## MEMORANDUM

Attention	Dr. Jeff Derksen Dean, Graduate Studies	Date	May 28, 2019
From	Dr. Parvaneh Saeedi Faculty of Applied Science, Gradua		<u>di@sfu.ca</u> es Committee

Re: FAS-CMPT, ENSC, MSE Calendar/new course proposal

The following new courses are approved by the Faculty of Applied Sciences and are forwarded to the Senate Graduate Studies Committee for approval. These curriculum items should be effective for **Spring 2020**. Please include them on the next SGSC agenda.

Currently our graduate students only have the option of enrolling in standard co-op courses. Most often, research students locate internship opportunities on their own and/or in consultation with their Senior Supervisor. These opportunities tend to fit better within their educational background and career goals than those available through co-op. These courses are designed to allow students and academic supervisors to easily manage this process and establish a more direct relationship between the supervisor and industrial partner. Another reason for creating this course is to ensure that students inform their senior supervisor about their intention to apply or accepting an internship offer allowing their supervisor to be more closely involved in the process.

Our existing co-op programs will be still available for our professional Masters degree where the GPC chair plays the role of academic advisor.

School of Computing Science

CMPT 631 – Industrial Internship

School of Engineering Science

ENSC 704 – Industrial Internship

School of Mechatronics System Engineering

MSE 795 - Industrial Internship

Best Regards,

APJ1

Parvaneh Saeedi, Faculty of Applied Science, Graduate Studies Committee

## MEMORANDUM

Attention	Dr. Jeff Derksen Dean, Graduate Studies	Date	May 16, 2019	
From	Dr. Ghassan Hamarneh Graduate Program Director, School c		<u>neh@sfu.ca</u> outing Science	

Re: CMPT Calendar / new course proposal

The following new course are approved by the CMPT GPC and are forwarded to the Senate Graduate Studies Committee for approval. These curriculum items should be effective for Spring 2020. Please include them on the next SGSC agenda.

Rationale: Currently our graduate students only have the option of enrolling in standard co-op courses and, most often, research students locate internship opportunities directly and/or in consultation with their Senior Supervisor. These courses are designed to allow for students and academic supervisors to easily manage this process and establish a more direct relationship between the academic supervisor and industrial partner. Another reason for creating this set of courses is that often students do not inform the academic supervisor about their intention to apply or accepting an internship offer and therefore such courses allows a more direct path for academic supervisor to be involved in the process.

Our existing co-op programs will be still available for our professional master's programs (PMP) degree students and the graduate dual degree program (GDDP) where the GPC chair plays the role of academic advisor.

1.CMPT 631 – Industrial Internship

Best Regards,

Dr. Ghassan Hamarneh Graduate Program Director, School of Computing Science



## New Graduate Course Proposal

Course Subject (eg. PSYC) CMPT	Number (eg. 810)6	31	Units (eg. 4) 3	
Course title (max. 100 characters)				
Industrial Internship				
Short title (for enrollment/transcript - max. 30 chara	<sup>cters)</sup> Industrial Ir	nternship		
Course description for SFU Calendar (course descrip purpose of this course is" If the grading basis is sati				This course will" or "The
See attached.				
Rationale for introduction of this course				
See attached.				
Term of initial offering (eg. Fall 2019) Spring 202	20	, ,	3 hrs/week for 13 wee	
			Il or part time v	
Frequency of offerings/year 3 times/year 2-3 per semester		er semester		
Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)				
Prerequisite and/or Corequisite 12 units of CM	PT course work with a	n SFU CGPA of at lea	ast 3.0. Approval of	supervisor and a GPC
· · · ·	is required prior to ap			
Criminal record check required? Yes if yes is s	elected, add this as prere	quisite	Additional course fe	ees? Yes No
Campus where course will be taught Burnaby	Surrey Var	ncouver Grea	at Northern Way	Off campus
Course Components * Lecture Sem	inar 🔲 Lab	Independent	Capstone	✓ Internship
Grading Basis Letter grades	Satisfactory/ U	Insatisfactory		rogress / Complete
Repeat for credit? 🔽 Yes 🗌 No To	otal repeats allowed? 2		Repeat within a terr	n? 🗌 Yes 🖌 No
Required course? 🗌 Yes 🔽 No Fi	nal exam required?	Yes 🔽 No	Capstone course?	Yes 🖌 No
Combined with a undergrad course? Yes V If yes, identify which undergraduate course and the additional course requirements for graduate students:				

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course

N/A

Additional faculty members, space, and/or specialized equipment required in order to offer this course

None required

``

## CONTACT PERSON

Academic Unit / Program	Name (typically, Graduate Program Chair)	Email
Computing Science	Ghassan Hamarneh	hamarneh@sfu.ca

## ACADEMIC UNIT APPROVAL

A course outline must be included.

Non-departmentalized faculties need not sign

Graduate Program Committee Ghassan Hamarneh	Signature	Date 2019-May-15
Department Chair Mohamed Hefeeda	Signature hefeeda	Date 17 May 2019

## FACULTY APPROVAL

The course form and outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content

Overlap check done? **VES** 

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

Faculty Graduate Studies Committee	Signature	Date
Parvaneh Sapedi	-dp.	Hay 28/2019

A library review will be conducted. If additional funds are necessary, DGS will contact the academic unit prior to SGSC.

## SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduat Zoe Druick	Signature Druicke	Date JUN 2 0 2019
		-

ADMINISTRATIVE SEC	tion (	for DGS	office only)
Library Chacke Mi	AY Z	<i>k 2</i> 018.	

- Course Attribute: NCPR
- Course Attribute Value: Internship
- Instruction Mode:
- Attendance Type:

If different from regular units: Academic Progress Units:	
Financial Ald Progress Units:	<u> </u>
Billing Factor 1	· • • • • • • • • • • • • • • • • • • •

Page 2 of 2 Revised December 2017

## **CMPT 631**

#### **Course description**

An internship in industry or a research environment for graduate research students. A final report will be submitted and graded by the student's supervisor. Units of this course do not count towards computing science breadth requirements. Graded on a satisfactory/unsatisfactory basis. Prerequisite: 12 units of CMPT course work with an SFU CGPA of at least 3.0. Approval of supervisor and a GPC representative is required prior to applying for, or accepting an internship.

## Rationale

Currently students only have the option of enrolling in standard Coop courses and most often, research students locate internship opportunities directly and/or in consultation with their Academic Supervisor. The course(s) are being created to allow for students and Supervisors to easily manage this process.



SCHOOL OF ENGINEERING SCIENCE

#### MEMO

## BURNABY

9801 Applied Sciences Building 8888 University Drive Burnah BC V5A 1S6 Canada

8888 University Drive Burnaby BC V5A 1S6 Canada		9
	ATTENTION	Parvaneh Saeedi, Associate Director
Tel: 778-782-4923	FROM	Bonnie Gray, Graduate Program Committee Chair
Fax: 778-782-4951 Web: www.sfu.ca/engineering		
	RE	New Course proposals
	DATE	May 17, 2019

Please accept our submission for new Engineering Graduate course proposals:

ENSC 704: Industrial Internship

If you have any questions, please let me know.

Dr Bonnie Gray

SIMON FRASER UNIVERSITY THINKING OF THE WORLD



## New Graduate Course Proposal

Course Subject (eg. PSYC) ENSC	Number (eg. 810)	704	Units (eg. 4) 3	
Course title (max. 100 characters)				
Industrial Internship				
Short title (for enrollment/transcript - max. 30 chara	<sup>acters)</sup> Industria	al Internsh	nip	
Course description for SFU Calendar (course descripurpose of this course is" If the grading basis is sat	ptions should be brief and isfactory/unsatisfactory in	d should never begin w nclude this in the desc	vith phrases such as "T ription)	his course will" or "The
The first term of an internship in industry or a research environment for MASc, PhD and MEng students. A final report will be submitted and graded by the student's Supervisor. Graded on a satisfactory/unsatisfactory basis.				
Rationale for introduction of this course				
Currently students only have the option locate internship opportunities directly a being created to allow for students and	nd/or in consultation	n with their Senio	r Supervisor. The	
Term of initial offering (eg. Fall 2019)	2020	Course delivery (eg.	3 hrs/week for 13 week	(s)
Spring	2020	13 weeks of full or part-time paid work		
Frequency of offerings/year 3 times per year Estimated enrollment per offering estimate 2-5 per			nate 2-5 per term	
Equivalent courses (courses that replicates the conte	nt of this course to such a	n extent that students	should not receive cree	dit for both courses)
Prerequisite and/or Corequisite 12 units of ENSC	course work at the 800	-level or higher wi	th an SELLCGPA of a	at least 3.0. Approval of
•	GPC representative is			AND A REAL PROPERTY AND A REAL
Criminal record check required? Yes if yes is a	selected, add this as prerec	quisite	Additional course fee	s? Yes Wo
Campus where course will be taught Burnaby	Surrey Var	ncouver 🔲 Grea	u Northern Way	✓ Off campus
Course Components * Lecture Sem	ainar 🗌 Lab	Independent	Capstone	✓ Internship
Grading Basis Letter grades	Satisfactory/ U	nsatisfactory	In Pro	ogress / Complete
Repeat for credit?  Yes No To	otal repeats allowed? TW	/0	Repeat within a term	? Ves 🗸 No
Required course? Yes V No F	inal exam required?	Yes 🖌 No	Capstone course?	Yes No
Combined with a undergrad course? Yes VNo graduate students:	If yes, identify which u	ndergraduate course a	nd the additional cour	se requirements for

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course Internship that requires prior approval by Senior Supervisor.

Additional faculty members, space, and/or specialized equipment required in order to offer this course None required

## CONTACT PERSON

Academic Unit / Program	Name (typically, Graduate Program Chair)	Email
Engineering Science	Dr Bonnie Gray	enscgpcc@sfu.ca

## ACADEMIC UNIT APPROVAL

A course outline must be included.

## Non-departmentalized faculties need not sign

Graduate Program Committee Dr Bonnie Gray	Signature	Date May 16/19.
Department Chair Dr Glenn Chapman	Signature	Date 1111619

## FACULT Y APPROVAL

The course form and outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content to the chair of the chair of

Overlap check done?

Instruction Mode: \_\_\_\_\_\_ Attendance Type: \_\_\_\_

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

Faculty Graduate Studies Committee	Signature	Date May 28/ 2019
Parvaneh Saecelu		1.5

A library review will be conducted. If additional funds are necessary, DGS will contact the academic unit prior to SGSC.

#### SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee	Signature Junice	Date JUN 2 0 2019
· · · · · · · · · · · · · · · · · · ·	<i>?</i>	1
ADMINISTRATIVE SECTION (for DGS office on Library, Check: <u>MAY 2 2 2019</u> Course Attribute: <u>NCPR</u>	··· If different from re	gularunts:

Financial/Aid Progress Units: 2



SIMON FRASER UNIVERSITY

## SCHOOL OF MECHATRONIC SYSTEMS ENGINEERING

May 27, 2019

250-13450 102 Avenue Surrey, BC V3T 0A3 Canada

Tel: 778-782-8456 Fax: 778-782-7514 Memorandum

From: Dr. Mehrdad Moallem, MSE Graduate Program Committee Chair

To: Dr. Parvaneh Saeedi, Associate Dean, Faculty of Applied Sciences

Subject: New course proposal for new course entitled "MSE 795: Industrial Internship"

We are hereby proposing introduction of the above optional course for our MASc and PhD programs.



# New Graduate Course Proposal

Course Subject (eg. PSYC) MSE	Number (eg. 810) 7	795	Units (eg. 4) 6 3	
Course title (max. 100 characters)				
Industrial Internship				
Short title (for enrollment/transcript - max. 30 chara	<sup>cters)</sup> Industria	al Internsh	nip	
Course description for SFU Calendar (course descrip purpose of this course is" If the grading basis is sati	otions should be brief and sfactory/unsatisfactory ir	l should never begin v nclude this in the desc	with phrases such as "This course will" or "The ription)	
Internship in industry or a research environment for graduate research students. A final report will be submitted and graded by the student's Supervisor on a satisfactory/unsatisfactory basis.				
Rationale for introduction of this course Currently students only have the option locate internship opportunities directly a being created to allow for students and S	nd/or in consultation	n with their Senic	or Supervisor. The course(s) are	
Term of initial offering (eg. Fall 2019) Spring	2020	13 weeks o	3 hrs/week for 13 weeks) f full or part-time works	
Frequency of offerings/year 3 times/year Estimated enrollment per offering 2-5 per semester				
Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)				
Prerequisite and/or Corequisite 12 units of MSE c supervisor and a	ourse work at the 700 GPC representative is	)-level or higher wi required prior to a	th a minimum SFU CGPA of 3.0. Approval of pplying for and accepting an internship."	
Criminal record check required? Yes if yes is a	selected, add this as prere	quisite	Additional course fees? Yes Voo	
Campus where course will be taught Burnaby	Surrey Va	ncouver Gro	at Northern Way 🗹 Off campus	
Course Components *	inar 🗌 Lab	Independent	Capstone Internship	
Grading Basis Letter grades	Satisfactory/ L	Insatisfactory	In Progress / Complete	
Repeat for credit? 🗹 Yes 🗌 No T	otal repeats allowed? 2	•	Repeat within a term? 🗌 Yes 🗹 No	
	inal exam required?	Yes 🗸 No	Capstone course? Yes V No	
Combined with a undergrad course? Yes VN graduate students:	5 If yes, identify which u	undergraduate course	and the additional course requirements for	

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course Internship that requires prior approval by Senior Supervisor and a GPC representative.

Additional faculty members, space, and/or specialized equipment required in order to offer this course None required

## CONTACT PERSON

Academic Unit / Program		Email
Mechatronics	M. Maullen	mmoallem@sfu.ca

ACADEMIC UNIT APPROVAL

A course outline must be included.

Non-departmentalized faculties need not sign

	Graduate Program Committee M. Moullem	Signature II, Hurd	Date May 15, 19
Acti	Department Chair Adman Rnd.	Signature AB M	Date May 15, 2019

## FACULT Y APPROVAL

The course formand outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content

Overlap check done?

7XXYES

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

Faculty Graduate Studies Committee	Signature Poly	Date May 28/2019
Parvaneh Saeech	- Tow	,

A library review will be conducted. If additional funds are necessary, DGS will contact the academic unit prior to SGSC.

#### SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Zudie: Committee ick	Signature	Junile	Date JUN 2 0 2019

ADMINISTRATIVE SECTION (for DGS office only) Ubraity Chiede.

- Course Africute: NOPR Course Africtione Value: Tote Coship 1 Intel Atribute:

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If different from regular units: Academic Progress Units:	6
Financial Aid Progress Units:	6
Billing Factor	ι

## MEMORANDUM

Attention	Dr. Jeff Derksen Dean, Graduate Studies	Date	April 17, 2019
From	Dr. Parvaneh Saeedi Faculty of Applied Science, Gradua	0	di@sfu.ca es Committee
Re: FAS-CMPT	Calendar/course changes		

The following new courses are approved by the Faculty of Applied Sciences and are forwarded to the Senate Graduate Studies Committee for approval. These curriculum items should be effective for **Spring 2020**. Please include them on the next SGSC agenda.

## School of Computing Science

- 1.CMPT 712 Approximation/Randomized Algorithms
- 2.CMPT 720 Robotic Autonomy: Algorithms and Computation
- 3.CMPT 727 Statistical Machine Learning
- 4.CMPT 762 Computer Vision

5.CMPT 763 – Biomedical Computer Vision

- 6.CMPT 766 Computer Animation and Simulation
- 7.CMPT 770 Parallel and Distributed Computing

Best Regards,

Parvaneh Saeedi, Faculty of Applied Science, Graduate Studies Committee

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#### COMPUTING SCIENCE

#### SpMEMO

BURNABY 9971 Applied Sciences Building 8888 University Drive Burnaby BC V5A 1S6 Canada

#### SURREY 250-13450 102 Avenue Surrey, BC V3T 0A3 Canada

Tel: 778-782-4277 Fax: 778-782-3045 Web: www.cs.sfu.ca

ATTENTION	Pavarneh Saeedi, Associate Director
FROM	Ghassan Hamarneh, Graduate Director
RE	Calendar/course changes – Effective Spring 2020 New 700 Level Course Proposals
DATE	March 21, 2019

## COURSE PROPOSALS - effective Spring 2020

Our School of Computing Science is currently offering many highly-specialized, low-enrollment specialized topics (ST) graduate courses and relatively much fewer foundational core CMPT graduate courses. Our graduate students are thus having difficulty choosing relevant courses, especially given increased demands from our growing graduate population, especially our Professionals Masters (Prof MSc) programs. We propose to create new 700-level courses that cover foundational, core graduate-level computing science topics, which are appealing to our broad graduate student population (Theses and Prof MSc), and even to some senior undergraduates (e.g. Accelerated Masters). We foresee this will strengthen our graduate program, provide better support for our growing Prof MSc specializations, and increase enrollment in graduate classes.

CMPT 712 - Approximation/Randomized Algorithms

CMPT 720 - Robotic Decision Making Autonomy: Algorithms and Computation

CMPT 727 - Statistical Machine Learning

CMPT 762 - Computer Vision

CMPT 763 - Biomedical Computer Vision

CMPT 766 - Computer Animation and Simulation



#### COMPUTING SCIENCE

## CMPT 770 -- Parallel and Distributed Computing

-2-

If you have any questions, please let me know.

Ghassan Hamarneh Graduate Chair, School of Computing Science



GRADUATE AND POSTDOCTORAL STUDIES

## New Graduate Course Proposal

Course Subject (cg. PSYC) CMPT	Number (eg. 810) 7	/12	Units (eg. 4) 3			
Course title (max. 100 characters)						
	Approximation and Randomized Algorithms					
Short title (for enrollment/transcript - max. 30 charac	cters) Approx	/Ra	ndom Algorithms			
Course description for SFU Calendar (course descrip purpose of this course is" If the grading basis is satis	tions should be brief and sfactory/unsatisfactory in	l should never begin w nclude this in the desc	vith phrases such as "This course will" or "The ription)			
Discrete optimization of nondeterministic p approximation and randomized algorithm will be covered in this course.	polynomial time (NF is, and the applicati	) hard problems ions of theoretica	, design and analysis of I analysis to the study of heuristics			
Rationale for introduction of this course Discrete optimization problems appear in every area of computing science and ICT (information and communication technology). Approximation and randomized algorithms play a central role in the study of algorithms and heuristics for solving optimization problems. This course will cover the design and analysis of approximation and randomized algorithms. This course has been offered as a special topics in theoretical computer science. It is more appropriate to offer the course as 700 level fundamental course.						
Term of initial offering (eg. Fall 2019)	2020	Course delivery (eg. 3 hrs/week for 13 weeks)				
Spring	2020	3 hrs/week for 13 weeks Estimated enrollment per offering 50				
Frequency of offerings/year One/year		Estimated enrollmer	nt per offering 50			
Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)						
Prerequisite and/or Corequisite None						
Criminal record check required? Yes if yes is selected, add this as prerequisite Additional course fees? Yes No						
Campus where course will be taught 🗹 Burnaby	Surrey Var	ncouver Gre	at Northern Way Off campus			
Course Components * 🗹 Lecture Semi	inar Lab	Independent	Capstone			
Grading Basis 🗸 Letter grades	Satisfactory/ U	Insatisfactory	In Progress / Complete			
Repeat for credit? Yes No To	otal repeats allowed?	)	Repeat within a term? 🗌 Yes 🖌 No			
	nal exam required?		Capstone course? Yes No			
Combined with a undergrad course? Yes V No If yes, identify which undergraduate course and the additional course requirements for graduate students:						

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course

## Igor Shinkar, Qianping Gu, Valentine Kabanets

Additional faculty members, space, and/or specialized equipment required in order to offer this course

## CONTACT PERSON

Acudemic Unit / Program	Name (typically, Graduate Program Chair)	Rmall
Computing Science	Ghassan Hamarneh	harmarneh@sfu.ca

## ACADEMIC UNIT APPROVAL

A course outline must be included.

## Non-departmentalized faculties need not sign

Graduate Program Committee Ghassan Hamarneh	Signature	Date 2018-Nov-20
Department, Citair Mohamed Helecola	Signature hole con	Day 10020118.

## FACULTY APPROVAL

The course form and outline must be sent by PGSC to the chairs of each PGSC (fgsc-list@sfu.ca) to check for an overlap in content

Overlap check done? YES

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

Faculty Graduate Studies Committee	Signature DIA .	Date 1104 23/2019
Parvareh Saeedi	- O'T-W L	May Cor Cr

A library review will be conducted. If additional funds are necessary, DGS will contact the academic unit prior to SGSC.

SENATE GRADUATE STUDIES COMMITTEE APPROVAL				
Senate Graduate Studies Committee	Signature 1	)mile_	Date	JUN 2 0 2019

ADMINISTRATIVE SECTION (for DGS office only) Library Check: MAY - 5 2019 Course Attribute: \_\_\_\_\_

Course Attribute V	alue:
Instruction Mode:	
Attendance Type:	

if different from regular units:	
Academic Progress Units:	
Financial Ald Progress Units:	
-	•

Page 2 of 2 Revised December 2017

## CMPT 712 - Approximation and Randomized Algorithms - Area I

Instructors: I. Shinkar, Q. Gu, V. Kabanets

#### **Calendar Description:**

Discrete optimization of nondeterministic polynomial time (NP) hard problems, design and analysis of approximation and randomized algorithms, and the applications of theoretical analysis to the study of heuristics will be covered in this course.

## **Course Objectives**

Discrete optimization problems appear in every area of computing science and ICT (information and communication technology). Most interesting optimization problems are NP-hard. For an NP-hard problem, it is impossible to have an algorithm which gives an optimal solution efficiently (in polynomial time) for any input instance of the problem unless P=NP. Approximation are powerful and widely used approaches for tackling hard optimization problems. An approximation algorithm finds a near-optimal solution with guaranteed accuracy efficiently for any input instance. Randomized algorithms are another powerful and widely used approach to tackle problems for which efficient deterministic algorithms are not known. This course will cover the fundamentals on the design and analysis of approximation and randomized algorithms for discrete optimization problems. By completing this course, students are expected to be able to design approximation and randomized algorithms, and apply theoretical analysis to the study of heuristics.

#### Topics

Approximation Algorithms: Introduction to approximation algorithms Paradigms for approximation algorithms Greedy, local search, dynamic programming and scaling data Linear and integer programming Deterministic rounding of linear programming Random sampling and randomized rounding of linear programming Semidefinite programs and randomized rounding Primal-dual method Hardness of approximation

Randomized Algorithms: Introduction to randomized algorithms Paradigms for randomized algorithms Game-theoretic techniques Random sampling Load balancing Probabilistic method and existence proofs Markov chains and random walks Algebraic Techniques

Other topics (e.g., sublinear algorithms) selected by instructors

#### Grading

Homework/participation-30%

Midterm - 30% Final - 40%

## **Text/reference books:**

David P. Williamson and David B. Shmoys The Design of Approximation Algorithms, R. Motwani and P. Raghavan Randomized Algorithms, Cambridge University Press M. Mitzenmacher and E. Upfal Probability and Computing: Randomized Algorithms and Probabilistic Analysis, Cambridge University Press

## Prerequisites/co-requisites

None

An undergraduate course in algorithms (e.g., these equivalent to SFU cmpt307/cmpt405); basic knowledge of mathematical proofs and analysis for correctness and efficiency of algorithms, probability theory and NP-completeness will be assets.



# New Graduate Course Proposal

Course Subject (eg. PSYC) CMPT	Number (eg. 810) 7	20	Units (eg. 4) 3
Course title (mar 100 characters)	onomy: Alg	orithms ar	nd Computation
Short title (for enrollment/transcript - max. 30 character		Autonomy	
Course description for SFU Calendar (course description purpose of this course is" If the grading basis is satisfied Fundamental concepts in robotics and decision making, and algorithms for role simulation of robotic systems, optimization robotic perception. Applications of the p	ons should be brief and actory/unsatisfactory in related fields, inc pots to understan tion, optimal cont	should never begin v clude this in the desc cluding compute d their environ	ational methods for solving ment. Topics include modeling and etv. reinforcement learning, and
Rationale for introduction of this course The material taught in this course is a and academia.	essential for rob	otics research	and development in the industry
Term of initial offering (eg. Fall 2019) Spring 2	2020	3 hrs/week	, 3 hrs/week for 13 weeks) for 13 weeks
Frequency of offerings/year once per year		Estimated enrollment per offering 30	
Equivalent courses (courses that replicates the content N/A	t of this course to such a	n extent that studen	is should not receive credit for both courses)
Prerequisite and/or Corequisite N/A			
Criminal record check required? Yes if yes is se	elected, add this as prere	quisite	Additional course fees? Yes INO
Campus where course will be taught	Surrey Va	ncouver G	reat Northern Way Off campus
Course Components * 🗹 Lecture Semi	inar Lab	Independent	Capstone
Grading Basis	Satisfactory/	Unsatisfactory	In Progress / Complete
	otal repeats allowed?	/a	Repeat within a term? 🗌 Yes 🗹 No
	inter established 1	✓ Yes 🗌 No	Capstone course? Yes 🗸 No
Combined with a undergrad course? Yes VNo graduate students:	If yes, identify which	undergraduate cours	se and the additional course requirements for

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course

Mo Chen, Angelica Lim, Richard Vaughan

Additional faculty members, space, and/or specialized equipment required in order to offer this course N/A

## CONTACT PERSON

Academic Unit / Program	Name (typically, Graduate Program Chuir)	Email
Computing Science	Ghassan Hamarneh	hamarneh@sfu.ca

## ACADEMIC UNIT APPROVAL

A course outline must be included.

## Non-departmentalized faculties need not sign

Graduate Program Committee Ghassan Hamarneh	Signature	Date 2019-Apr-17
Department Chair Mohamal Hefleda	Signature hipech	Date API 17, 2019

## FACULTY APPROVAL

The course form and outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content

Overlap check done? ZYES

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

Faculty Graduate Studies Committee	Signature	Date
Parvanch Saerchi	S.P.m	Hay 2812019

A library review will be conducted. If additional funds are necessary, DGS will contact the academic unit prior to SGSC.

## SENATE GRADUATE STUDIES COMMITTEE APPROVAL

[	Senate Graduate Studies Committee Zoe Druick	Signature 1	mile	Date JUN 2 0 2019	

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Library Chec

**Course Attribute:** 

- Course Attribute Value: \_\_\_\_\_\_ Instruction Mode: \_\_\_\_\_\_
- Attendance Type: \_\_\_\_\_

If different from regular units: Academic Progress Units: Financial Aid Progress Units:

Page 2 of 2 Revised December 2017

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## <u>CMPT 720</u>

<u>Title</u> Robotic Autonomy: Algorithms and Computation

#### **Calendar Description**

Fundamental concepts in robotics and related fields, including computational methods for solving decision making, and algorithms for robots to understand their environment. Topics include modeling and simulation of robotic systems, optimization, optimal control, robotic safety, reinforcement learning, and robotic perception. Applications of the material include unmanned aerial vehicles and self-driving cars.

Topics

- Modelling and simulation
- Optimization
- Optimal control
- Robotic safety
- Reinforcement learning
- Robotic perception

#### Grading

- Assignments 40%
- Project proposal 10%
- Project presentation and report 50%

#### Materials

• Course notes

#### **Optional supplementary material**

- R. Siegwart, I. R. Nourbakhsh, and D. Scaramuzza, *Introduction to Autonomous Mobile Robots*. The MIT Press, 2011, 9780262015356.
- S. M. LaValle, *Planning Algorithms*. Cambridge University Press, 2006, 9780521862059.
- S. Boyd and L. Vandenberghe, *Convex Optimization*. Cambridge University Press, 2008, 9780521833783.
- D. P. Bertsekas, *Dynamic Programming and Optimal Control*. Athena Scientific, 2017, 1886529434.
- R. S. Sutton and A. G. Barto, Reinforcement Learning: An Introduction. MIT Press, 2018.



GRADUATE AND POSTDOCTORAL STUDIES

# New Graduate Course Proposal

Course Subject (eg. PSYC) CMPT	Number (eg. 810) 7	27	Units (eg. 4) 3		
Course title (max. 100 characters)			а .		
Statistical Machine Lea	rning				
Short title (for enrollment/transcript - max. 30 characte	olar mar	ch Learnii			
Course description for SFU Calendar (course description purpose of this course is" If the grading basis is satisfar	ctory/unsatisfactory in	clude this in the desc	ription		
Statistical foundation for machine learning algorithms methods and tailoring them to fit a given learning prol probabilistic graphical models, maximum likelihood es and sampling-based methods.	plem Potential topics	Include			
Rationale for introduction of this course There is great demand for grad courses on machine lear science masters program. A primary weakness in our ex machine learning at a deep level; this course aims to ado STAT 852 or other material in that department; we agree	dress this weakness. I	spoke with Thomas L ould be complimentar	oughlin about whether this course overlaps with y.		
Term of initial offering (eg. Fall 2019) Spring 2	020	Course delivery (eg. 3 hrs/week for 13 weeks)			
Spring z	020	3 hrs/week for 13 weeks			
Frequency of offerings/year once per year Estimated enrollment per offering 80					
Equivalent courses (courses that replicates the content	of this course to such a	n extent that students	s should not receive credit for both courses)		
N/A					
Prerequisite and/or Corequisite N/A					
Criminal record check required? Yes if yes is sele	ected, add this as prere	quisite	Additional course fees? Yes No		
Campus where course will be taught 🗹 Burnaby	Surrey Va	ncouver Gr	eat Northern Way Off campus		
Course Components * 🗹 Lecture 🗌 Semin					
Grading Basis 🗸 Letter grades Satisfactory/ Unsatisfactory In Progress / Complete					
Repeat for credit? 🗌 Yes 🗹 No Tota	al repeats allowed? <u>n/</u>	'a	Repeat within a term? 🗌 Yes 🗹 No		
Required course?  Yes Vo Final exam required?  Yes No Capstone course?			Capstone course? Yes Vo		
Combined with a undergrad course? Yes No If yes, identify which undergraduate course and the additional course requirements for graduate students:					

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course

## Maxwell Libbrecht, Oliver Schulte, Greg Mori

Additional faculty members, space, and/or specialized equipment required in order to offer this course

## CONTACT PERSON

Academic Unit / Program	Name (typically, Graduate Program Chair)	Bmail
	Maxwell Libbrecht	maxwl@sfu.ca

## ACADEMIC UNIT APPROVAL

A course outline must be included.

## Non-departmentalized faculties need not sign

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Graduate Program Committee	Signature	Date
	Signature	1. tel 14/14
Ethnssun thanaumen		
Department Chair	Signature //	Date
Mohamed Heles da	hover	1-06/9/19
TIMMANIEL MERCECION		

## FACULTY APPROVAL

Course Attribute Value:

Instruction Mode:\_ Attendance Type:\_

The course form and outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content

Overlap check done? YES

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

Paculty Graduate Studies Committee	Signature	Date May 28/2019	
Parvareh Saecchi	- P.duli	May 20/0011	ļ

A library review will be conducted. If additional funds are necessary, DGS will contact the academic unit prior to SGSC.

SENATE GRADUATE STUDI	ES COMMITTEE APPROVAL	
Senate Graduate Studies Consumpties ZOE Druick	Signature Dunicke	JUN 2 0 2019
		•
ADMINISTRATIVE SECTION ((gr DGS office onl)	)	
Library Check <u>MAY - 6 2019</u> Course Attribute:		rom regular units:

Academic Progress Units:

Financial Aid Progress Units:

Page 2 of 2 Revised December 2017

## CMPT 727 - Statistical Machine Learning -Breadth Area Ill

Instructors: Maxwell Libbrecht, Oliver Shulte, Greg Mori

**Course Description** 

Statistical foundation for machine learning algorithms, emphasizing bias-variance tradeoff. Students will learn principles for choosing effective methods and tailoring them to fit a given learning problem. Potential topics include; probabilistic graphical models, maximum likelihood estimation, latent variables and the EM algorithm, convex optimization, and variational and sampling-based methods.

## Topics

Discrete and continuous modeling; maximum likelihood estimation; the exponential family; latent variables and the EM algorithm; probabilistic graphical models; convex optimization.

Grading

Grading will be based on written assignments, a midterm and a final as follows:

50% Assignments

45% Exams

5% Participation

Materials and Readings

Machine Learning: A Probabilistic Perspective" by Kevin P. Murphy



# New Graduate Course Proposal

	1	Г			
Course Subject (eg. PSYC) CMPT	Number (eg. 810) 7	62	Units (eg. 4) 3		
Course title (max. 100 characters)					
Computer Vision					
Short title (for enrollment/transcript - max. 30 character	Compan	er Vision			
Course description for SFU Calendar (course descriptio purpose of this course is" If the grading basis is satisfac	ctory/unsatisfactory in	clude this in the desc.	ription		
Selected topics in computer vision inc alignment, epipolar geometry, stereo, and deep learning.	luding cameras	, edge detectio	on, feature matching, optical flow,		
Rationale for introduction of this course Computer Vision is the discipline of "teachinumerous emerging technologies such aut visual effects, digital mapping and surveilla	tonomous cars, d	rones, robotics,	augmented reality, virtual reality,		
Term of initial offering (eg. Fall 2019) Spring 2	.020	Course delivery (eg. 3 hrs/week for 13 weeks) 3 hrs/week for 13 weeks			
Frequency of offerings/year Once per year Estimated enrollment per offering 25					
Equivalent courses (courses that replicates the content of N/A	of this course to such a	n extent that students	s should not receive credit for both courses)		
Prerequisite and/or Corequisite N/A		c			
	ected, add this as prere	quisite	Additional course fees? Yes VNo		
Campus where course will be taught 🗹 Burnaby			eat Northern Way Off campus		
Grading Basis 🗸 Letter grades Satisfactory/ Unsatisfactory In Progress / Complete					
	al repeats allowed?/	a Repeat within a term? Yes 🗸 No			
Required course? Yes V No Fin	al exam required?	✓ Yes 🗌 No	Capstone course? Yes 🗸 No		
Combined with a undergrad course? Yes No If yes, identify which undergraduate course and the additional course requirements for graduate students:					

If additional resources are required to offer this course, provide information on the source(s) of those additional resources,

Faculty member(s) who will normally teach this course

Yasutaka Furukawa, Ping Tan, Greg Mori

Additional faculty members, space, and/or specialized equipment required in order to affer this course NON8

## CONTACT PERSON

Academic Unit / Program	Name (typically, Graduate Program Chair)	Email
CMPT	Yasutaka Furukawa	furukawa@sfu.ca

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## ACADEMIC UNIT APPROVAL

A course outline must be included.

#### Non-departmentalized faculties need not sign

Greduale Program Committee Ghassan Hamarneh	Signature	Date 2018-Nov-15
Department Chair Woma Med Hefeeda	Signature helpen	Dale 100 20/18.
I Dittinition Thereebell		<u></u>

## FACULTY APPROVAL

The course form and outline must be sent by PGSC to the chairs of each FGSC (fgsc-list@sfu.co) to check for an overlap in content

Overlap check done? YES

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

Faculty anduste Studies Conunlities	Signature	Date Hay 28,2019
- Jananen Saeech	- V-J. W. C	

A library review will be conducted. If additional funds are necessary, DGS will contact the academic unit prior to SGSC.

SENATE GRADUATE STUDI	ES COMM	ITTEE	APPROVAL		
Senate Graduate Endles Compliant	Signature 2	$\widehat{\mathbf{I}}$	muie	Date	JUN 2 0 2019

ADMINISTRATIVE	SECTION (for DGS office only)
Course Attribute:	
Instruction Mode	Value:
Attendance Type	

If different from regular units:	
Academic Progress Units:	
Financial Aid Progress Units:	

Page 2 of 2 Revised December 2017

#### CMPT 762 – Computer Vision

#### **Calendar Description**

Selected topics in computer vision including cameras, edge detection, feature matching, optical flow, alignment, epipolar geometry, stereo, structure-from-motion, recognition, segmentation, detection, and deep learning.

#### **Course Description**

Computer vision is the process of automatically extracting information from images and videos. The course covers various aspects of Computer Vision, for example, imaging geometry (camera calibration, stereo, and panoramic image stitching), video surveillance (motion detection and tracking), image segmentation, object recognition, and more. The course teaches both traditional techniques and more recent learning-based approaches such as deep neural networks.

## Topics

Camera Features Image stitching Photometric stereo Optical flow Face Segmentation Object detection Recognition Reconstruction Deep Learning

#### Grading

Coding projects: 60% (15% x 4) Final project report: 35% Final project presentation: 5%

#### Textbooks\*

Computer Vision: Algorithms and Applications Richard Szeliski Springer <u>9781848829350</u>

\*suggested but not required



## New Graduate Course Proposal

Course Subject (eg. PSYC) CMPT Number (eg. 810) 7	763	Units (eg. 4) 3	
Course title (max. 100 characters)			
Biomedical Computer Vision			
		uter Vision	
Course description for SFU Calendar (course descriptions should be brief and purpose of this course is" If the grading basis is satisfactory/unsatisfactory in	icitude unis in the descr	ip(ioii)	
Selected Topics in biomedical imaging. Computer visions, medical data and image representation, file formats, segmentation, registration, classification, anatomical shape modeling, machine and deep learning tools and methods.			
Rationale for introduction of this course Medical imaging (et MRI, CT, ultrasound) provides indispensable data for disease diagnosis and treatment, yet dimenstionality, complexity and amount of data generated hinders manual interpretation and necssitates computational methods like the ones covered in this course.			
Term of initial offering (eg. Fall 2019) Spring 2020	3 hrs/week t	3 hrs/week for 13 weeks) for 13 weeks	
Frequency of offerings/year once per year	Estimated enrollment per offering 25		
Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)			
Prerequisite and/or Corequisite N/A			
IN/A			
Criminal record check required? Yes if yes is selected, add this as prere	equisite	Additional course fees? Yes No	
Campus where course will be taught 🖉 Burnaby 🗌 Surrey 🗌 Vancouver 🗍 Great Northern Way 🗍 Off campus			
Course Components * 🗹 Lecture 🗌 Seminar 🗌 Lab	Independent	Capstone	
Grading Basis 🗸 Letter grades Satisfactory/	Unsatisfactory	In Progress / Complete	
Repeat for credit? Yes 🖌 No Total repeats allowed? <u>n</u>	/a	Repeat within a term? 🗌 Yes 🗹 No	
Required course:	✓ Yes 🗌 No	Capstone course? Yes VNO	
	undergraduate course	and the additional course requirements for	

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course

## Ghassan Hamarneh

Additional faculty members, space, and/or specialized equipment required in order to offer this course NONE

## CONTACT PERSON

Academic Unit / Program	Name (typically, Graduate Program Chair)	Bmail
СМРТ	Ghassan Hamarneh	hamarneh@sfu.ca

## ACADEMIC UNIT APPROVAL

A course outline must be included.

#### Non-departmentalized faculties need not sign

Graduate Program Committee Ghassan Hamarneh	Signature	Date 2019-Apr-10
Department Cheir Mohamed Hefeeda	Signature hopen	Date Apr. 1.0/19

## FACULTY APPROVAL

The course form and outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content

Overlap check done? YES

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

Paculty Graduate Studies Committee	Signature DC A	Date May 22,2019
Panarch Sacedi	-ap su	1:49 207-17

A library review will be conducted. If additional funds are necessary, DGS will contact the academic unit prior to SGSC.

## SENATE GRADUATE STUDIES COMMITTEE APPROVAL

	Senate Graduate Studies Continuita	Signature	Date
1	Senate Graduat Zoe Druick	1. Dunce	JUN 2 0 2019
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763

Page 2 of 2 Revised December 2017

#### CMPT 763 - Biomedical Computer Vision – Breadth Area V

Instructors: Ghassan Hamarneh

## Calendar Description

Selected Topics in biomedical imaging. Computer visions, medical data and image representation, file formats, segmentation, registration, classification, anatomical shape modeling, machine and deep learning tools and methods.

Students with credit for ENSC 474 and ENSC 895 may not take this course for further credit.**Course Description** 

The course introduces the students to the foundations of biomedical computer vision and biomedical image computing

#### Topics

Biomedical imagine modalities / data acquisition Manifold-valued 3D images (beyond RGB pixels) Medical imaging file formats (beyond PNG, TIFF) Segmentation (focus on deformable contours and meshes) Prior knowledge for medical image segmentation (e.g. statistical geometrical and topological models) Rigid and non-rigid spatial transformation Medical image registration Sample clinical applications Intro to machine learning and deep learning for medical image analysis

#### Grading

40% Final 30% Assignments 20% Midterm 10% Quizzes

#### **Materials and Readings**

**Course notes** 

Guide to Medical Image Analysis: Methods and Algorithms (Toennies) – Springer Nature - 144717318X Insight Into Images - A K Peters/CRC Press - 978-1568812175 Medical Image Analysis (Dhawan) Wiley-IEEE Press - 978-0471451310 Biomedical Imaging, Visualization, and Analysis (Robb) - Wiley-Liss - 978-0471283539 Biomedical Image Analysis (ed. Rangayyan and Neuman) - CRC Press - 978-0849396953 Medical Image Analysis Methods (ed. Costaridou) - CRC Press - 978-0849320897



GRADUATE AND POSTDOCTORAL STUDIES

# New Graduate Course Proposal

		00	
Course Subject (eg. PSYC) CMPT	Number (eg. 810) 7	66	Units (eg. 4) 3
Course title (max. 100 characters)			
Computer Animation a	and Simula	tion	
Short title (for enrollment/transcript - max. 30 charac	Compan	er Animat	
Course description for SFU Calendar (course descrip purpose of this course is" If the grading basis is satis	tions should be brief and sfactory/unsatisfactory in	should never begin w clude this in the desc	vith phrases such as "This course will" or "The ription)
Selected topics in computer animation and simulation, including 3D character animation and control, facial animation, simulation of natural phenomena (i.e. fluids, crowd simulation, and deformation of pliant materials).			
Rationale for introduction of this course Currently "CMPT 466 Animation" teaches the basics of animation, such as interpolation, simple physics-based animation and motion capture. There is not enough time to cover more advanced topics and anim_ation systems, such as fluid animation, facial animation and character animation.			
Term of initial offering (eg. Fall 2019)	2020	1 A A A A A A A A A A A A A A A A A A A	3 hrs/week for 13 weeks) for 13 weeks
Frequency of offerings/year once per ye	ar	Estimated enrollme	nt per offering 20-40
Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)			
Prerequisite and/or Corequisite N/A			
		à	·
Criminal record check required? Yes if yes is	selected, add this as prere	quisite	Additional course fees? Yes VNo
Campus where course will be taught 🗸 Burnaby 🗌 Surrey 🗍 Vancouver 🗍 Great Northern Way 🗍 Off campus			
Course Components * 🗹 Lecture 🗌 Sem	ninar Lab	Independent	Capstone
Grading Basis 🗸 Letter grades	Satisfactory/ T	Jnsatisfactory	In Progress / Complete
Repeat for credit? Yes 🗸 No 🖓 T	otal repeats allowed? <u>n</u>	/a	Repeat within a term? 🗌 Yes 🗸 No
	1	✓ Yes 🗌 No	Capstone course? Yes 🗸 No
Combined with a undergrad course? Yes VN graduate students:	o If yes, identify which	undergraduate course	and the additional course requirements for

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course

KangKang Yin, Eugune Flume

Additional faculty members, space, and/or specialized equipment required in order to offer this course none.

## CONTACT PERSON

Academic Unit / Program	Name (typically, Graduate Program Chair)	Bmoil
school of computing science	Ghassan Hamarneh	hamarneh@sfu.ca

## ACADEMIC UNIT APPROVAL

A course outline must be included.

## Non-departmentalized faculties need not sign

Graduate Program Committee Ghassan Harnarneh	Signature	Date 2018-Oct-27
Department Chatr MSNAMEEL HEFERDA.	Stynature help und	Dut 100 20/15.

### FACULTY APPROVAL

The course form and outline must be sent by FGSC to the chairs of each FGSC (Igsc-list@sfu.ca) to check for an overlap in content

Overlap check done? YES

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Baculty/Academic Unit commits to providing the necessary resources.

Faculty Graduate Studies Committee	Signature Al A	Date 149 28 2019
Harvaneh Jaeecli	AF.W L	1~1) ~ 1

A library review will be conducted. If additional funds are necessary, DGS will contact the academic unit prior to SGSC.

## SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee	Signature	June	JUN 2 0 2019

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Course Attribute:	
Course Attribute Value:	
Instruction Mode:	
Attendance Type:	

if different from regular units:	
Academic Progress Units:	
Financial Aid Progress Units;	

Page 2 of 2 Revised December 2017

## CMPT 766 - Computer Animation and Simulation

## CALENDAR DESCRIPTION:

Selected topics in computer animation and simulation, including 3D character animation and control, facial animation, simulation of natural phenomena (i.e. fluids, crowd simulation, and deformation of pliant materials).

## COURSE DETAILS:

This course focuses on simulation-based and learning-based animation methods, such as physics-based character animation, facial animation, and animation of deformable objects. These animation topics can better prepare senior undergraduate students and master's students for future employment in related industry, such as computer games and visual effects, virtual and augmented reality, and medical and engineering simulation and training. They also provide knowledge building blocks for PhD students in related fields such as computer graphics, computer vision, human computer interaction, and human robot interaction. Basic animation methods such as traditional animation and keyframe animation taught in CMPT466 will not be covered in this course. Potential students are expected to be strong in math and programming.

## Topics

- Physics-based animation and simulation
- 3D character animation
- Learning-based animation methods
- Facial animation
- Simulation of natural phenomena
- Simulation of deformable objects

## Grading

participation 10%; class presentations 20%; assignments 20%; term project 50%

## **Materials**

- Recommend book: Computer Animation: Algorithms and Techniques (third edition), Rick Parent.
- Relevant papers in SIGGRAPH Proceedings and ACM Transactions on Graphics
   Journal.



GRADUATE AND POSTDOCTORAL STUDIES

# New Graduate Course Proposal

Course Subject (eg. PSYC) CMPT	Number (eg. 810) 7	70	Units (eg. 4) 3
Course title (max. 100 characters)			a.
Parallel and Distributed	Computi	ng	
Short title (for enrollment/transcript - max. 30 characters	<sup>9</sup> Parallel	Distribute	d Computing
Course description for SFU Calendar (course description purpose of this course is" If the grading basis is satisfact	ory/unsatisfactory in	ciude uns in me desc.	ription
Principles involved in designing modern parallel and distributed software systems. The course focuses on covering key concepts like concurrency, synchronization, consistency models and fault tolerance. Involves multiple programming projects and reading articles on recent trends in parallel and distributed computing.			
Rationale for introduction of this course			
Parallel and distributed computing is fu	indamental to	develop softwa	are solutions that extract
maximum performance from modern p	arallel systems	S.	κ.
	~	Course delivery (eg	3 hrs/week for 13 weeks)
Term of initial offering (eg. Fall 2019) Spring 2020 Course delivery (eg. 3 hrs/week for 13 weeks) 3 hrs/week for 13 weeks			
Frequency of offerings/year once per year Estimated enrollment per offering 30			
Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)			
N/A			
Prerequisite and/or Corequisite N/A			
Criminal record check required? Yes if yes is select	cted, add this as prere	quisite	Additional course fees? Yes VNo
Campus where course will be taught Burnaby Surrey Vancouver Great Northern Way Off campus			
Course Components * 🗹 Lecture Semina	r Lab	Independent	Capstone
Grading Basis 🗸 Letter grades	Satisfactory/ U	Unsatisfactory	In Progress / Complete
Repeat for credit? 🗌 Yes 🗸 No Total	repeats allowed? <u>n/</u>	/a	Repeat within a term? 🗌 Yes 🗹 No
		Yes No	Capstone course? Yes 🗸 No
Combined with a undergrad course? Yes VNo 1 graduate students:	f yes, identify which	undergraduate course	e and the additional course requirements for

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course

Keval Vora

Additional faculty members, space, and/or specialized equipment required in order to after this course Mohamed Hefeeda, Arrvindh Shriraman, Jlangchuan Liu

#### **CONTACT PERSON**

i		an to tolly Conducto Decomon Chale)	Kmeil
	Academic Unit / Proymm	Name (typically, Graduate Program Chair)	
	СМРТ	Keval Vora	keval@sfu.ca

#### BACADEMIC UNIT APPROVAL

A course outline must be included.

#### Non-departmentalized faculties need not sign

Graduate Program Committee Ghassan Hamarneh	Signature	Dale Oct. 27, 2018
Degariment Chair Monchaed Hefeeda	Signature Speech	Papov.20118

## FACULTY APPROVAL

The course form and outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content

Overlap check done? ZYES

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

Faculty Graduate Studies Committee	Signalure 201 A	Date
Parvarch Saeechi	dp.h.	Hay 28/2619

A library review will be conducted. If additional funds are necessary, DGS will contact the academic unit prior to SGSC.

## SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee	Signature 1	Junk	JUN 2 0 2019
			Provide the second s

ADMINISTRATIVE SECTION (CODES)	fice only)
Course Attribute:	
Course Attribute Value:	
Instruction Mode:	<b></b>
Attendance Type:	

If dilferent from regular units: Academic Progress Units: Financial Ald Progress Units:

Page 2 of 2 Revised December 2017

#### **CMPT 770 - Parallel & Distributed Computing**

#### **Calendar Description**

Principles involved in designing modern parallel and distributed software systems. The course focuses on covering key concepts like concurrency, synchronization, consistency models and fault tolerance. Involves multiple programming projects and reading articles on recent trends in parallel and distributed computing.

1

#### Topics

- Principles of Parallel Algorithm Design
- Shared Memory Parallel Programming
- Concurrent Data Structures
- Distributed Memory Model & Programming
- Memory Consistency Models
- Fault Tolerance
- GPU: Massive Parallelism
- Real World Parallel & Distributed Systems

#### **Grading Scheme**

Assignments 35%, Project 35%, Exam 30%

#### **Reading List:**

#### None.

Reference Textbooks:

- The Art of Multiprocessor Programming. Maurice Herlihy and Nir Shavit. 2008. Morgan Kaufmann Publishers Inc.
- Distributed Systems: Principles and Paradigms. Andrew S. Tanenbaum and Maarten van Steen. 2006. Prentice-Hall, Inc.



## FACULTY OF ARTS AND SOCIAL SCIENCES

#### MEMO

Office of the Dean

STREET ADDRESS Academic Quadrangle Room 6164

MAILING ADDRESS 8888 University Drive Burnaby BC Canada V5A 1S6

778-782-4967 (Tel)

sean\_zwagerman@sfu.ca www.sfu.ca/fass

ATTENTION:	Jeff Derksen, Dean Graduate & Postdoctoral Studies
FROM :	Sean Zwagerman, Chair Faculty of Arts and Social Sciences Graduate Studies Committee
RE:	FASSGSC Proposals
DATE:	May 15, 2019

The Faculty of Arts and Social Sciences Graduate Committee met on May 2, 2019 and passed the attached motions. Please place these items on the agenda for the next SGSC meeting.

#### 1. Department of Economics-

- a) The calendar change of the MA program and associated calendar changes 9
- b) The deletion of ECON 988 and associated calendar changes
- 2. Department of Political Science
  - a) The calendar changes for POL 804
- Department of English

   The deletion of ENGL 890 and associated calendar changes
- 4. Urban Studies Program
  - a) The new course URB 601
  - b) The new course URB 602
- 5. Department of Psychology
  - a) The proposed TRSS program
  - b) The minor changes to CRIM/TRSS courses

20 DUB

We would like the above changes to become effective Spring 2019:

Sean Zwagerman

Associate Dean, Faculty of Arts and Social Sciences

#### FASSGSC 19-9



#### SIMON FRASER UNIVERSITY URBAN STUDIES

Urban Studies Program 2<sup>nd</sup> Floor, 515 West Hastings Street Vancouver, British Columbia Canada V6B 5K3

Tel: 778.782.7888 Fax: 778.782.5297

24 April 2019

To: Sean Zwagerman, Associate Dean Faculty of Arts and Social Sciences

From: Meg Holden, Director Urban Studies

New course proposals, Urban Studies 601 and 602

The Urban Studies Program steering committee has approved a new pair of graduate courses related to professional and intellectual development. We request consideration of these proposed courses by the FASS Graduate Studies Curriculum Committee at its next meeting.

The rationale for this pair of new two-credit graduate seminar courses is as follows:

• The Urban Studies Program has a tradition of offering in-depth professional development activities and seminars on a non-credit basis. We have built strong relationships with relevant units at the University as well as throughout our alumni network to develop and maintain these. This year, on March 8<sup>th</sup>, Urban Studies faculty member Karen Ferguson along with the Urban Studies graduate student association organized, convened and hosted ACCESS BC, the most ambitious effort yet in professional development offerings in Urban Studies. ACCESS BC consisted of an afternoon of interactive programming offered to international graduate students across the university, with a focus on the skills and resources our students need to find good work in BC. It was designed and offered in partnership with SFU Career and Volunteer Services and the Arts and Social Sciences Co-op, with external and alumni partners also presenting and it was sponsored by the Graduate Student Society, office of the Vice President Academic and the Faculty of Arts and Social Sciences. URB 602 allows a means for this event to be repeated in the future, with hosting responsibilities undertaken by students and instructor of this course.



#### SIMON FRASER UNIVERSITY URBAN STUDIES

- In order to consider what would be in keeping with work in this vein in other FASS units, we reviewed descriptions and outlines for comparable graduate courses in Sociology & Anthropology (SA 840) and English (ENGL 880) and requested and reviewed the syllabi for comparable pair of courses in GSWS (811&812). These inputs were drawn upon to develop the course outlines represented in this proposal.
- The 2-credit, 2 course structure is preferred because this will allow the key targeted student groups, international students and graduate students who enter Urban Studies directly from their undergraduate degree, to have full-time status in our fee-per-credit system when they take this course along with a seminar course. The courses are designed as a pair and we will strongly recommend that they be taken this way by international students. At the same time, these will not be required courses in order to maintain flexibility within Urban Studies and because we do not see these courses as providing necessary value to all of our students. Each course can also be taken alone; so 601 is not prerequisite for 602.

New course proposal forms and outlines for URB 601 and 602 are attached.



## New Graduate Course Proposal

Course Subject (eg. PSYC) URB	Number (eg. 810) <b>(</b>	601	Units (eg. 4) 2	
Course title (max. 100 characters)				
Urban Professional De	velopmen	it I		
Short title (for enrollment/transcript - max. 30 charact	urb Pro	Dev I		
Course description for SFU Calendar (course descript purpose of this course is" If the grading basis is satisf	ions should be brief and actory/unsatisfactory in	l should never begin v nclude this in the desc	vith phrases such as "This course will" or "The ription)	
Designed to assist and support urban studies student professional development as practitioners and change-agents in a range of possible career paths.				
Rationale for introduction of this course The Urban Studies Program has offered high-quality professional development non-credit programming to great success. Regularizing this pair of credit courses will allow students and faculty to dedicate time and attention to this work that is commensurate to success in connecting urban research and professional practice.				
Term of initial offering (eg. Fall 2019) Spring 2020 Course delivery (eg. 3 hrs/week for 13 weeks) 2 hrs/week for 13 weeks				
Frequency of offerings/year once Estimated enrollment per offering 12			nt per offering 12	
Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)				
none			· · · · · · · · · · · · · · · · · · ·	
Prerequisite and/or Corequisite none				
Criminal record check required? Yes if yes is se	lected, add this as prere	quisite	Additional course fees? Yes VNo	
Campus where course will be taught Burnaby Surrey Vancouver Great Northern Way Off campus				
Course Components * Lecture Seminar Lab Independent Capstone				
Grading Basis 🗹 Letter grades	Satisfactory/ U	Insatisfactory	In Progress / Complete	
Repeat for credit? Yes 🖌 No Tot	tal repeats allowed?		Repeat within a term? 🗌 Yes 🗹 No	
Required course? Yes V No Fin	nal exam required?	Yes 🖌 No	Capstone course? Yes 🖌 No	
Combined with a undergrad course? Yes Vo If yes, identify which undergraduate course and the additional course requirements for graduate students:				

\* See important definitions on the curriculum website.

#### RESOURCES

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course

## Karen Ferguson

Additional faculty members, space, and/or specialized equipment required in order to offer this course

Meg Holden, other faculty

#### CONTACT PERSON

Academic Unit / Program	Name (typically, Graduate Program Chair)	Email
Urban Studies	Meg Holden	mholden@sfu.ca

#### ACADEMIC UNIT APPROVAL

A course outline must be included.

#### Non-departmentalized faculties need not sign

Graduate Program Committee	Signature / /	Date
Meg Holden	Charles	16 April 2019
Department Chair	Signature /	Date
Meg Holden	Start	16 April 2019

## FACULTY APPROVAL

The course form and outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content

Overlap check done? X YES

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

Faculty Graduate Studies Committee	Signature	A	Date	
SEAN ZWAGERMAN	M		14 MAY 2019	

A library review will be conducted. If additional funds are necessary, DGS will contact the academic unit prior to SGSC.

## 🔊 SENATE GRADUATE STUDIES COMMITTÉE APPROVAL

Senate Graduate Studies Committee	Signature 3 Dunche	Date JUN 2 0 2019
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ADMINISTRATIVE SECTION (for DGS office only)	
ADMINISTRATIVE SECTION (for DGS office only) Library Check: <u>APR 2 4 2019</u>	
Course Attribute:	If different from regular units;
Course Attribute Value:	Academic Progress Units:
Instruction Mode:	Financial Aid Progress Units:
Attendance Type:	

Page 2 of 2 Revised December 2017

#### URBAN PROFESSIONAL DEVELOPMENT I

TERM I: URB 601 (2 credits)

#### COURSE DESCRIPTION

This is the first of a two-course series designed to assist and support urban studies student professional development as urbanists and researchers in a range of possible career paths.

#### LEARNING OBJECTIVES

In this course, we will:

- Create and foster an inclusive professional social network beginning with new student habits of peer support and extending into mentorship opportunities with alumni, adjuncts, faculty and associates
- Understand and map the evolving landscape of urban professions in Canada
- Learn to articulate our own urban professional and research skills and to relate these to the articulated needs of local organizations
- Develop an effective professional CV
- Gain practice in professional writing and referencing and in peer review
- Gain practice in job search skills and interview preparation
- Practice skills necessary for healthy work-life balance during graduate school
- Backcast urban studies research results into a professional request for qualifications necessary to complete the research within the scope of a selected public or private sector organization

#### COURSE EVALUATION

- 15 % Mapping myself into the urban professional landscape in Canada
- 30 % Professional CV, including peer review and feedback
- 30 % Participation and hosting role
- 25 % Urban professional development logbook and reflections\*
  - \* In addition to attending and participating in class, attendance and reflection on other relevant seminars and workshops offered throughout the university are required.

#### READINGS

Flyvbjerg, B. 2012. Why mass media matter, and how to work with them: phronesis and megaprojects. In *RealSocialScience: Applied Phronesis.* Flyvbjerg, B., Schram, S. and Landman, T. (eds). London: Cambridge University Press, p. 113-71.

Forester, J. 2013. *Planning in the Face on Conflict: the surprising possibilities of facilitative leadership*. Chicago: APA Planners Press.

Jackson, J. 2017. Neoliberalism and urban planning in Toronto: how seasoned planners adjust to their changing circumstances. *International Planning Studies* 23(2): 144-162.

Taşan-Kok, T. and Oranje, M. (eds) 2018. From Student to Urban Planner: Young Practitioners' Reflections on Contemporary Ethical Challenges. New York: Routledge.

#### OUTLINE OF CLASS MEETINGS

SESSION 0: New Graduate Student Orientation (an essential precursor to the course, typically held on a Saturday before the semester begins)

SESSION 1: How to survive and thrive as an Urban Studies student, foreshadowing your professional future as an urbanist (Guests: Eva Lewis, FASS Coop; Ricky Tu, Transition Case Manager for International Students, Health and Counselling Services)

SESSION 2: Urban NGO and social and economic justice work in the city (Guest: Adjunct Professor Seth Klein)

SESSION 3: Urban NGO work in Canada debrief and discussion

SESSION 4: Urban governance work in Canada (Guests: Urban Studies alumni panel of municipal professionals)

SESSION 5 : Urban governance work in Canada debrief and discussion

SESSION 6: Urban development and design work in Canada (Guests: Urban Studies alumni panel of urban development professionals)

SESSION 7 : Urban development and design work in Canada debrief and discussion

SESSION 8 : Crafting and workshopping a professional CV (Guest: Penny Freno)

SESSION 9 : Networking and job search skills practice (Guest: Penny Freno)

SESSION 10 : The soft skills of "fitting in": networking, translating international skills and experience workshop

SESSION 11 : Defining new fields of urban work

SESSION 12 : Your professional future as an urbanist

SESSION 13: Your professional future as an urbanist



## New Graduate Course Proposal

r				
Course Subject (eg. PSYC) URB	Number (eg. 810) <b>(</b>	602	Units (eg. 4) 2	
Course title (max. 100 characters)			4	
Urban Professional De	evelopmen	nt II	1	
Short title (for enrollment/transcript - max. 30 charac	<sup>cters)</sup> Urb Pro	Dev II		
Course description for SFU Calendar (course descrip purpose of this course is" If the grading basis is satis	tions should be brief and sfactory/unsatisfactory in	l should never begin v nclude this in the desc	vith phrases such as "This course will" or "The ription)	
Designed to assist and support urban studies student professional development as researchers in a range of possible career paths.				
Rationale for introduction of this course The Urban Studies Program has offered high-quality professional development non-credit programming to great success. Regularizing this as a pair of credit courses will allow students and faculty to dedicate time and attention to this work that is commensurate to success in connecting urban research and professional practice.				
Term of initial offering (eg. Fall 2019) Spring 2020 Course delivery (eg. 3 hrs/week for 13 weeks) 2 hrs/week for 13 weeks				
Frequency of offerings/year ONCE		Estimated enrollment per offering 12		
Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)				
none				
Prerequisite and/or Corequisite <b>none</b>				
Criminal record check required? Yes if yes is so	elected, add this as prere	quisite	Additional course fees? Yes VNo	
Campus where course will be taught Burnaby Surrey Vancouver Great Northern Way Off campus				
Course Components * Lecture Seminar Lab Independent Capstone				
Grading Basis 🗸 Letter grades	Satisfactory/ U	Insatisfactory	In Progress / Complete	
Repeat for credit? Yes 🗸 No To	otal repeats allowed? 0		Repeat within a term? 🗌 Yes 🗹 No	
Required course? Yes No Fi	nal exam required?	Yes 🖌 No	Capstone course? Yes No	
Combined with a undergrad course? Yes No graduate students:	If yes, identify which u	indergraduate course	and the additional course requirements for	

\* See important definitions on the curriculum website.

#### RESOURCES

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course

## Karen Ferguson

Additional faculty members, space, and/or specialized equipment required in order to offer this course

Meg Holden, other faculty

#### CONTACT PERSON

Academic Unit / Program	Name (typically, Graduate Program Chair)	Email
Urban Studies	Meg Holden	mholden@sfu.ca

## ACADEMIC UNIT APPROVAL

A course outline must be included.

#### Non-departmentalized faculties need not sign

Graduate Program Committee Meg Holden	Signature	Date 16 April 2019
Department Chair Meg Holden	Signature.	Date 16 April 2019
L		1

## FACULTY APPROVAL

The course form and outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content

Overlap check done? X YES

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

	11 10	
Faculty Graduate Studies Committee	Signature	Date
SEAN ZWAGERMAN	AJ	14 May 2019

A library review will be conducted. If additional funds are necessary, DGS will contact the academic unit prior to SGSC.

#### SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee	Signature Dunche	Date JUN 2 0 2019
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ADMINISTRATIVE SECTION (for DGS office only)	
ADMINISTRATIVE SECTION (for DGS office only) Library Check: <u>APR 2 4 2019</u> Course Attribute:	If different from regular units:
Course Attribute Value:	Academic Progress Units:
Instruction Mode:	Financial Aid Progress Units:
Attendance Type:	and the second secon

Page 2 of 2 Revised December 2017

#### **URBAN PROFESSIONAL DEVELOPMENT II**

TERM II: URB 602 (2 credits)

#### COURSE DESCRIPTION

This is the second of a two-course series designed to assist and support urban studies student professional development as urbanists and researchers in a range of possible career paths.

#### LEARNING OBJECTIVES

During this course, we will:

- Create and foster an inclusive professional social network beginning with new student habits of peer support and extending into mentorship opportunities with alumni, adjuncts, faculty and associates
- Learn to articulate and make connections between our own urban professional and research skills and interests and those of our classmates and professional associates within the urban studies community
- Understand and map the evolving landscape of urban academic professions in Canada
- Gain exposure to grant writing, conference presentation, and the publication process for academic audiences
- Develop an effective academic CV portfolio that could serve as the basis of a future PhD or funding application
- Practice skills necessary for healthy work-life balance during graduate school

#### COURSE EVALUATION

- 15 % Mapping myself into the urban academic landscape in Canada
- 30 % Academic portfolio, including peer review and feedback
- 30 % Participation and hosting role ACCESS BC
- 25 % Urban professional development logbook and reflections\*
  - \* In addition to attending and participating in class, attendance and reflection on other relevant seminars and workshops offered throughout the university are required.

#### READINGS

Calhoun, C. 2008. Foreword. In Engaging Contradictions: Theory, politics and method of activist scholarship (C.R.Hale, ed) Berkeley: University of California Press.

Chatterton, P. 2008. Demand the possible: journeys in changing our world as a public activist-scholar. Antipode 40: 421-28.

Gans, H. 2009. A sociology for public sociology: some needed disciplinary changes for creating public sociology. In A Handbook of Public Sociology, I. Jeffries (ed). Lanham, MD: Rowman & Littlefield, p. 123-34.

Gurran, N. 2018. Public cities, public scholars? Questioning urban policy and research in Australia. Urban Policy and Research 36(1): 1-10. Piven, F.F. 2010. Reflections on scholarship and activism. Antipode 42: 806-10.

Siemiatycki, M. 2012. The role of the planning scholar: research, conflict, and social change. JPER 32: 147-59.

Hurley, J. et al. 2016. Exchange between researchers and practitioners in urban planning. Planning Theory & Practice 17(3): 447-473.

OUTLINE OF CLASS MEETINGS

SESSION 1: Your academic future as an urbanist (Guest: Research Commons)

SESSION 2: How to survive and thrive as an Urban Studies student redux

SESSION 3: Introduction to ACCESS BC event, establishing hosting role for students

SESSION 4: Seminar on the academic landscape for urbanists in Canada (Guests: Urban Studies faculty, adjuncts, associates)

SESSION 5: Debrief on the academic landscape for urbanists in Canada

SESSION 6: Urban research proposals, grant opportunities, best practices

SESSION 7: Writing a grant application (Guests: Urban Studies CGS-M winning students and alumni)

SESSION 8: Preparing an academic portfolio

SESSION 9: Academic networking : conference-going tips and abstract writing practice

SESSION 10: Hosting ACCESS BC event

SESSION 11: Creating and maintaining an effective online presence (Guests: Urban Studies alumni)

SESSION 12: Peer review of portfolio work

SESSION 13: Presentation of the portfolio



FACULTY OF COMMUNICATION, ART AND TECHNOLOGY Office of the Dean

TEL 778.782.8790 FAX 778.782.8789

TASC 2, 7800 8888 University Drive Burnaby, BC V5A 1S6 www.fcat.sfu.ca

#### MEMORANDUM

ATTENTION:	Senate Graduate Studies Committee
FROM:	Stuart Poyntz, Chair, FCAT Graduate Studies Committee
RE:	New Graduate Course (CMNS 835) and MFA Program Name Change
DATE:	May 16, 2019

The following new course has been approved by the Faculty of Communications, Art and Technology and is forwarded to the Senate Graduate Studies Committee for approval.

This course covers a key area of research in Communication Studies and is necessary for both foundational training and training for students specializing in this area. This curriculum item should be effective for Fall 2020.

Spring ka

#### School of Communication

New Course: CMNS 835 - Communication and Cultural Policies, Power and Governance

#### School for the Contemporary Arts

*Program name change from "MFA in Interdisciplinary Studies" to "MFA in Interdisciplinary Arts"*.

Please include both items in the next SGSC agenda.

In addition to this memo, please find enclosed the syllabus, the New Graduate Course Proposal form, the name change memo from SCA, as well as a calendar entry change form.

SIMON FRASER UNIVERSITY ENGAGING THE WORLD

Sincerely,

67

Stuart Poyntz, Ph.D. Associate Dean, Academic, FCAT Chair, FCAT Graduate Studies Committee

cc: Arne Eigenfeldt, Graduate Program Chair, SCA Kirsten McAllister, Graduate Program Chair, CMNS

db/SP



SCHOOL OF COMMUNICATION

Shrum Science Centre K9671 8888 University Drive, Burnaby, BC Canada V5A 186 tel 778.782.3687 fax 778.782.4024 www.cmns.sfu.ca

KQ

#### Memorandum

To: The Faculty Graduate Studies Committee in the Faculty of Communication, Art and Technology

From: Dr. Kirsten McAllister, Graduate Chair, School of Communication Re: Proposal for a New Graduate Course in the School of Communication, CMNS 835 Date: April 19, 2019

The following new course, CMNS 835, "Communication and Cultural Policies, Power and Governance", which has been designed by Dr. Sarah Ganter and Prof. Alison Beale, has been approved by the School of Communication and its Graduate Program Committee and is being forwarded to FCAT's Faculty Graduate Studies Committee for approval. This course covers a key area of research in Communication Studies and is necessary for both foundational training and also training for students specializing in this area. This curriculum item should be effective for Fall\_Specific Program.

2020. Please include it on the next FGSC agenda.

School of Communication: CMNS 835

In addition to this memo, please find enclosed the syllabus and the New Graduate Course Proposal form.

Kirsten McAllister Communication Graduate Chair

April 19, 2019



## New Graduate Course Proposal

Course Subject (eg. PSYC) CMNS	Number (eg. 810) <b>{</b>	335	Units (eg. 4) 3
Course title (max. 100 characters)			-
Communication and Cultural Policies, Power and Governance			
Short title (for enrollment/transcript - max. 30 chara	<sup>cters)</sup> Communic	and Cultur	al Policies
Course description for SFU Calendar (course descrip purpose of this course is" If the grading basis is satis	otions should be brief and sfactory/unsatisfactory in	l should never begin w nclude this in the descr	vith phrases such as "This course will" or "The ription)
The governance of communication a communication and cultural policies communication studies.	and culture in Ca as a field of inte	nada and globa rnational schola	ally. Issues in and approaches to arly inquiry in cultural and
Rationale for introduction of this course			
Advanced study of the domestic and complementing existing CMNS cour communication through the examina	ses on cultural to	pics and on the	e political economy of d policy research methods.
Term of initial offering (eg. Fall 2019) Course delivery (eg. 3 hrs/week for 13 weeks)			
Spring 2020 3hrs/week for 13 weeks			
Frequency of offerings/year 1 a year Estimated enrollment per offering 12			
Equivalent courses (courses that replicates the content of this course to such an extent that students should not receive credit for both courses)			
Prerequisite and/or Corequisite			
Criminal record check required? Yes if yes is s	elected, add this as prere	quisite	Additional course fees? Yes Vo
Campus where course will be taught 📈 Burnaby	Surrey 🖌 Var	ncouver Grea	at Northern Way Off campus
Course Components * Lecture VSemi	inar 🗌 Lab	Independent	Capstone
Grading Basis	Satisfactory/ U	Insatisfactory	In Progress / Complete
Repeat for credit? Yes 🔽 No To	otal repeats allowed?	0	Repeat within a term? 🗌 Yes 🖌 No
Required course? Yes 🖌 No Fi	nal exam required?	Yes 🖌 No	Capstone course? Yes 🖌 No
Combined with a undergrad course? Yes VNo graduate students:	If yes, identify which u	indergraduate course a	and the additional course requirements for

\* See important definitions on the curriculum website.

## RESOURCES

If additional resources are required to offer this course, provide information on the source(s) of those additional resources.

Faculty member(s) who will normally teach this course Dr. Alison Beale, Dr. Sarah Ganter, Dr. Zoe Druick Additional faculty members, space, and/or specialized equipment required in order to offer this course none

## CONTACT PERSON

Academic Unit / Program	Name (typically, Graduate Program Chair)	Email
CMNS Graduate Program	Dr. Kirsten McAllister	kirsten_mcallister@sfu.ca

## ACADEMIC UNIT APPROVAL

A course outline must be included.

#### Non-departmentalized faculties need not sign

Graduate Program Committee Kirsten McAllister	Signature 47 Z	<sup>Date</sup> April 11, 2019
Department Chair Peter Chow-White	Signature	<sup>Date</sup> April 11, 2019

## FACULTY APPROVAL

The course form and outline must be sent by FGSC to the chairs of each FGSC (fgsc-list@sfu.ca) to check for an overlap in content

Overlap check done? **V**YES

This approval indicates that all the necessary course content and overlap concerns have been resolved. The Faculty/Academic Unit commits to providing the necessary resources.

Faculty Graduate Studies Committee Signature	Date May 17, 2019
--	-------------------

A library review will be conducted. If additional funds are necessary, DGS will contact the academic unit prior to SGSC.

## SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee Zoe Druick	Signature 3Duncle	Date JUN 2 0 2019
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ADMINISTRATIVE SECTION (for DGS office only) Library Check: <u>MAY 2 2 2019</u>	
Course Attribute:	If different from regular units:
Course Attribute Value:	Academic Progress Units:
Instruction Mode:	Financial Aid Progress Units:
Attendance Type:	

School of Communication Simon Fraser University CMNS Graduate Course Proposal

## Communication and Cultural Policies, Power, and Governance

## Course Overview:

Political uncertainties and fast technological change have challenged media and communication policy research and lead in the last decade to a range of scholarly meta-reflections that discuss the relevance of policy for the broader field of media and communication studies. Many scholars have addressed ideological and analytical barriers of research, criticized the neglect of context, and raised awareness of how different philosophy of science traditions shape policy research in media and communication studies. In this course, we revisit policy as a field of scholarly inquiry in media and communication studies as it has developed over the years, and discuss its value for current academic, public, and political discussions. We will discuss ways and motives with which scholars analyze questions of policy, power and governance to understand the rise of different normative foundations of modes of policy formation, articulation and interpretation over time and across countries.

#### Learning Outcomes:

Students will learn about different perspectives and approaches in media and communication policy research, current epistemological and ontological discussions and the different implications those have on the development of the field within media and communication studies.

#### Seminar Format:

This is a weekly participatory seminar. The course is a seminar based on reading and discussion with comments and guidance from the instructor. The aim is to engage with the material, aiming for intellectual independence, critical engagement, synthesis and evaluation rather than regurgitation. There will be issue based team presentations, research workshops on current policy issues and students will have the opportunity to discuss their take home essays in class before the final submission.

## **Required Readings:**

Braman, S. (2006). Change of State. Information, Policy and Power. Cambridge, Massachusetts: The MIT Press.

Mueller, M. (2010) Networks and states: The global politics of Internet governance. Information revolution and global politics. Cambridge, Massachusetts: The MIT Press.

#### **Additional Readings:**

Freedman, D. (2008). The Politics of Media Policy. Cambridge, UK. Malden, USA: Polity.

## Schedule for the Seminar:

#### Week 1: Foundations in Media and Communication Policy Research

- Ball, S.J. (1993). What Is Policy? Texts, Trajectories and Toolboxes. Discourse: Studies in the Cultural Politics of Education. 13 (2), 10-17. DOI:10.1080/0159630930130203.
- Braman, S. (2006). Change of State. Information, Policy, and Power. Chapter 1: An Introduction to Information Policy. (p.1-9). Cambridge, Massachusetts: The MIT Press.
- Freedman, D. (2008). The Politics of Media Policy. Chapter 1 Introducing Media Policy. P. 1-23. Cambridge, UK. Malden, USA: Polity.

## Week 2: Media and Communication Policy as Research Field- Critique and ways Forward

- Braman, S. (2004). Where has media policy gone? Defining the field in the twenty-first century. *Communication Law and Policy*, 9 (2), 153-182.
- Just, N. & Puppis, M. (2018). Moving Beyond Self-Castigation: Let's Reinvigorate Communication Policy Research Now! In Communication Research 68 (2). P. 327-336.
- Padovani, C. (2018). Gendering Media Policy Research and Communication Governance. Javnost/The Public 25(3), 256-264.
- Picard, R. (2016). Isolated and Particularised: The State of Contemporary Media and Communications Policy Research. Javnost- The Public. Journal of European Institute for Communication and Culture. 23(2): 135-152.

## Week 3: Media and Communication Governance- concept, approach or theory?

Colebatch, H. K. (2009). Governance as a conceptual development in the analysis of policy. Critical Policy Studies, 3 (1), 58-67. doi: 10.1080/19460170903158107.

- Puppis, M. (2010). Media Governance: A New Concept for the Analysis of Media Policy and Regulation. Communication, Culture & Critique, 3 (2), 134–149. doi: 10.1111/j.1753-9137. 2010.01063.x.
- Müller, M. (2010). Networks and States: The Global Politics of Internet governance. Information revolution and global politics. Chapter 1 (p. 1-31). Cambridge, Massachusetts: The MIT Press.

Hofmann, J. Katzenbach, C., & Gollatz, K. (2017). Between coordination and regulation: Finding the governance in Internet governance. New Media and Society 19 (9), 1406-1423.

#### Week 4: Technology as challenge or analytical perspective?

Just, N. & Latzer, M (2017). Governance by algorithms: reality construction by algorithmic selection on the Internet. Media, Culture & Society, 39(2), 238-258.

- Mueller, M. (2010) Networks and states: The global politics of Internet governance. Information revolution and global politics Chapter 3. Cambridge: MIT Press.
- Wu, Tim & Yoo, Christopher (2007). Keeping the Internet Neutral? Debate. Federal Communications Law Journal, Vol. 59, No.3. https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=953989

#### Week 5: Market centered approaches in policy research

- Baker, E.C. (2002). Media, Markets, and Democracy. Cambridge, UK; New York, US; Oakleight, [Introduction] Australia; Madrid, Spain; Cape Town, South Africa: Cambridge University Press.
- Becerra, M. & Mastrini, G. (2011). Global Financial Crisis. What Crisis? Argentine Media in View of the 2008 International Financial Crisis. International Journal of Communication 4(19), 611-629.
- George L.M, & Hogendorn, C. (2012). Aggregators, search and the economics of new media institutions. Information Economics and Policy. 24(2012). Pp. 40-51.
- Just, N. (2018). Governing online platforms: Competition policy in times of platformization. Telecommunications Policy, 42 (2018): 386-394.
- Picard, R. (2005). Media, Money and the Public Interest. In: Geneva Overholser & Kathleen Hall Jamieson (Eds). Institutions of American Democracy. (p. 337-350). Oxford: Oxford University Press.

## Week 6: Historical context and analysis

#### **Book review**

- Bannerman, S. & Haggart, B. (2014). Historical institutionalism in communication studies. Communication Theory 25(1). 1-22.
- Braman, S. (2006). Change of State. Information, Policy and Power. Chapter 3: Bounding the Domain: Information Policy for the Twenty-First Century. (p. 39-79). Cambridge, Massachusetts: The MIT Press.
- Löblich, M. (2018). The History of Media Policy Based on mediatization: A Theoretical Perspective. International Journal of Communication 12 (2018), 4468-4487.

## Week 7: Power formations and diffusions

- Braman, S. (2006). Change of State. Information, Policy, and Power. Chapter 2: Forms and Phases of Power: The Bias of the Informational State. Chapter 9: Information, Policy, and Power in the Informational State. (p. 9-38; p. 313-328). Cambridge, Massachusetts: The MIT Press.
- Freedman, D. (2008). The Politics of Media Policy. Chapter 4 Dynamics of the Media Policymaking Process. (p. 80-104).
- Kreiss, D. (2015). The problem of citizens: E-democracy for actually existing democracy. Social Media + Society 1(2), 1-11.
- Sarikakis, K., & Ganter, S.A (2014). Priorities in global media policy transfer: Audio-visual and digital policy mutations in the EU, MERCOSUR and the U.S. triangle. European Journal of Communication, 29 (1), 17-33.
- Schmidt, V. (2008). Discursive Institutionalism: The Explanatory Power of Ideas and Discourse. Annu. Rev. Polit. Sci, 11, 303-3026. Doi:10.1146/annurev.polisci.11.060606.135342.

## Week 8: Values, beliefs and principles

Cuilenburg van, J., & McQuail, D. (2003). Media policy paradigm shifts: towards a new communications policy paradigm. European Journal of Communication, 18 (2), 181-207.

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- Freedman, D. (2008). The Politics of Media Policy. Chapter 2: Pluralism, Neo-liberalism and Media Policy. Chapter 3 Reinterpretation of Media Policy principles (p. 24-79). Cambridge, UK. Malden, USA: Polity.
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#### Week 9: Media and Communication Policy and State Identity

- Braman, S. (2006). Change of State. Information, Policy, and Power. Chapter 4: Constitutional Principles and the Information Spaces They Create. (p.79-116), Chapter 5 Information Policy and Identity (p. 115-166). Cambridge, Massachusetts: The MIT Press.
- Cox, R. (1989). Gramsci, Hegemony and International Relations: An Essay in Method. Millenium: Journal of International Studies, 12 (2), 162-175
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#### Week 10: Policy as discourse and policy discourses Research workshop 1: Project definition

- Ali, C. & Puppis, M. (2018). When the Watchdog Neither Barks Nor Bites: Communication as a Power Resource in Media Policy and Regulation. Communication Theory, 28(3): 270-291
- Freedman, D. (2010). Media Policy Silences: The Hidden Face of Communications Decision Making. *The International Journal of Press/Politics*, **15** (3), pp. 344-361.
- Dixon, S. (2013). Discursive Intervention in International Intellectual property Policy-making: How Developing Countries and Civil Society Employ Text to Challenge and Change the Status Quo. Communication, Culture & Critique, 6 (4), 598-615.
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Streeter. T. (2013). Policy, Politics, and Discourse. Communication, Culture & Critique, 6 (2013), 488-501.

## Week 11: Between Global Perspectives and the De-Westernization of a research field Research workshop 2: Project discussion and feedback

- Chenoi. J.-M., Rojas Fuerte, J.S. (2018). The difficult path to the insertion of the global south in internet governance. In: D. Opperman (Ed.). Internet Governance in the Global South.
  History, Theory, and Contemporary Debates (p. 42-73). São Paulo: Núcleo de Pesquisa em Relacoes Internacionais (NUPRI). Available online: www.nupri.prp.usp.br
- Frau-Meigs, D. (2011). Media matters in the cultural contradiction of the "information society" towards a human rights-based governance. Brussels: Council of Europe Publishing Editions. [Conclusion].
- Flew T. & Waisbord, S. (2015). The ongoing significance of national media systems in the context of media globalization, Media, Culture & Society, 37 (4), 620-636. DOI: 0.1177/0163443714566903.
- Manokha, I. (2009). Foucault's Concept of Power and the Global Discourse of Human Rights. Journal of Global Society. 23(4), p. 429-452.

Raboy, M., & Mansell, R. (2011). The Handbook of Global Media and Communication Policy. New York: Wiley-Blackwell. [Introduction]

## Week 12: Media and Communication Policy: citizens as analysts

- Mueller, M. (2010) Networks and states: The global politics of Internet governance. Information revolution and global politics Chapter 2. Cambridge: MIT Press.
- Gillespie, Tarleton (2018). Chapter 3: Community Guidelines or the Sound of No. In: Custodians of the Internet. Platforms, content moderation, and the hidden decisions that shape social media.

Lentz, B. (November 8, 2016). Funding policy advocacy: An interview with the founder and director of the Media Democracy Fund. In Working for Internet Freedoms: Network Neutrality and the Labors of Policy Advocacy in the U.S. [Special Section]. International Journal of Communication, Vol 10: 5811-5826.

Segura. S. & Waisbord, S. (2016) Media movements: Civil society and media policy reform in Latin America. Chapter 2: The field of media activism:organizations and demands. Zed Books Ltd.

Wildavsky, A. (1979). The art and craft of policy analysis. Palgrave Macmillan. Chapter 11 citizens as analysts. p. 269-297.

## Week 13: Normativity and evidence

## **Research workshop 3: Final presentations**

Braman, S. (2008). Policy Research in an Evidence-Averse Environment. International Journal of Communication. 2 (2008), 433-449. Available from:

http://ijoc.org/index.php/ijoc/article/view/322/0

- Just, N. (2009). Measuring media concentration and diversity: New approaches in Europe and the USA. Media, Culture & Society, 31(1), 97-117.
- Winseck, D. & Cuthbert, M. (1997). From communication to democratic norms: reflections on the normative dimensions of international communication policy. *Gazette*, 59 (1): 1-20.

# Week 14: Knowledge-making in the field: questions and approaches Feedback on essay drafts

N. Just & M. Puppis. Trends in Communication Policy Research. New Theories, Methods and Subjects. Bristol: Intellect. [Introduction and Conclusion].

Mueller, M. (1995). Why Communication Policy is passing "Mass Communications" by: Political Economy as the Missing Link. *Critical Studies in Mass Communication*. 12 (4): 457-72.

Vennesson, P. (2008). Case studies and process tracing: theories and practices, In: Donatella Della Porta. & Michael Keating (Eds.), Approaches and Methodologies in Social Sciences. A Pluralist Perspective. (pp. 223-239). Cambridge: CUP.

#### **Grading:**

Attendance	20%
Research workshop presentation	25%
Book Review	25%
Final Paper	30%
(2000-3000 words for MAs; 4000-5000 words	for PhDs)

<u>Note:</u> All students **need to hand in all assignments to pass the course**. Students are expected to attend each class. However, if a student must miss a class, they must notify the instructor before the class starts. Students **missing more than two classes** will be **evaluated with F in their participation mark.** You are strongly advised to complete your readings prior to each class. *The School expects that the grades awarded in this course will bear some reasonable relation to established university-wide practices with respect to both levels and distribution of grades. In addition, the School will follow Policy S10.01 with respect to Academic Integrity, and Policies S10.02, S10.03 and S10.04 as regards Student Discipline. [Note: as of May 1, 2009, the previous T10 series of policies covering Intellectual Honesty (T10.02), and Academic Discipline (T10.03) have been replaced with the new S10 series of policies.]* 

#### **Grading Guidelines:**

A- to A+	Thorough knowledge of concepts and/or techniques, with a high degree of skill and/or originality in satisfying the requirements of an assignment or course. A comprehensive knowledge of the subject matter and principles taught in the course. A high degree of originality in approach and independence of thought. A superior ability to organize and analyze ideas, and an outstanding ability to communicate (including excellent writing skills).
B+	Very good level of knowledge of concepts and/or techniques, together with considerable skill in using them to satisfy the requirements of an assignment or course. Some originality.
B- to B	A substantial knowledge of the subject matter. A moderate degree of originality and independence of thought. A good ability to organize and analyze ideas and an ability to communicate clearly and fluently.
C to C+	Acceptable level of knowledge of concepts and/or techniques, together with some skill in using them to satisfy the requirements of an assignment or a course.
С-	Acceptable grasp of the subject matter. Demonstrates understanding of assignment. Some ability to organize and analyze ideas, and ability to communicate adequately.
D	Minimum knowledge of concepts and/or techniques needed to satisfy the requirements of an assignment or a course. Rudimentary knowledge of the subject matter. Some evidence that organizational and analytic skills have been developed, but with significant weaknesses in some areas, and significant weaknesses in communication.

The school expects that the grades awarded in this course will bear some reasonable relation to established university-wide practices with respect to both levels and distribution of grades. In addition, the School will follow Policy S10.01 with respect to Academic Integrity, and Policies S10.09, S10.09 and S10.04 as regards Student Discipline (note: as of May 1, 2009 the previous T10 series of policies covering Intellectual Honesty (T10.09) and Academic Discipline (T10.03) have been replaced with the new S10 series of policies). For further information see: <u>www.sfik.ca/policies/Students/index.html</u>