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MEMORANDUM

FROM

ATTENTION Senate

Wade Parkhouse, Chair

Senate Committee on

**Undergraduate Studies** 

RE: Course Changes (SCUS 21-04) DATE February 5, 2021

1/2 PAGES

#### For information:

Acting under delegated authority at its meeting of February 4, 2021 SCUS approved the following curriculum revisions effective Fall 2021.

### a. Faculty of Applied Sciences

- 1. School of Computing Science
  - (i) Prerequisite change for CMPT 300 (Spring 2022)
- 2. School of Engineering Science
  - (i) Description and prerequisite changes for ENSC 405W
- 3. School of Sustainable Energy Engineering
  - (i) Equivalent statement changes for SEE 241 and 242
- 4. School of Mechatronics Systems Engineering
  - (i) Title, description and prerequisite changes for MSE 310

# **b.** Beedie School of Business

(i) Deletion of BUS 328

# c. Faculty of Communication, Art and Technology

- 1. School of Communication
  - (i) Prerequisite changes for CMNS 349
  - (ii) Description changes for CMNS 353 and 453

### d. Faculty of Environment

## 1. School of Resource and Environmental Management

- (i) Course number, prerequisite and equivalent statement changes for PLAN 200
- (ii) Prerequisite change for PLAN 407
- (iii) Prerequisite change for REM 200, 202W, 356W, 406, 407
- (iv) Prerequisite and equivalent statement changes for REM 495
- (v) Prerequisite and unit changes for REM 221
- (vi) Description and prerequisite changes for REM 320W
- (vii) Prerequisite, title and description change for SD 281 and 481
- (viii) Prerequisite and title change for SD 381
- (ix) Prerequisite, title, description and equivalent statement change for SD 401
- (x) Temporary withdrawal of REM 281, 356, 381, 481
- (xi) Temporary withdrawal of SD 301

# e. Faculty of Science

# 1. Department of Biomedical Physiology and Kinesiology

- (i) Prerequisite change for BPK 402
- (ii) Description and prerequisite changes for BPK 448

# 2. Department of Earth Sciences

- (i) Description change for EASC 101, 104, 108 and 210
- (ii) Description and equivalent statement changes for EASC 103
- (ii) Prerequisite change for EASC 411

### 3. <u>Department of Molecular Biology and Biochemistry</u>

(i) Prerequisite change for MBB 441

### 4. Department of Statistics and Actuarial Science

- (i) Course number, title, description and equivalent statement changes for ACMA 210
- (ii) Course number, title, units, description, prerequisite and equivalent statement changes for ACMA 320
- (iii) Description and prerequisite changes for ACMA 340, 440, 455
- (iv) Description change for ACMA 355
- (v) Prerequisite change for ACMA 360W, 465, 470, 475
- (vi) Course number, title, description, prerequisite and equivalent statement changes for ACMA 425

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



COURSE SU	ВЈЕСТ	CMPT 300 NUMBER	300	TITLE	Operat 300 (3)	ing Systems I CN			
<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):									
Course number		Units		Prere	Prerequisite ⊠				
Title		Description		Equivalent $\square$ Statement					
WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  Prerequisite: CMPT 225 and (CMPT 295 or (ENSC 251 and ENSC 252)) )), all with a minimum grade of C  Prerequisite: CMPT 225 and (CMPT 295 or ENSC 254), all with a minimum grade of C									
Fall, Spring, S	Summer	ND YEAR FOR CHANGES and year (please enter in		s)					
Spring 202		analy our (proude once in		·)					



Cmpt 295 was added as a prereq for cmpt 300, starting Spring 2021. While we made this change, we haven't properly updated the ENSC prereqs to those equivalent to cmpt 295.

According to the internal transfer part of the calendar, "ENSC major students may use ENSC 251 and ENSC 254 in place of CMPT 295." Indeed, we should use ENSC 254 as an ENSC equivalent of CMPT 295 (and we may drop the explicit mention of ENSC 251, as ENSC 251 is already a prereq for ENSC 254). Both CMPT and ENSC UCC Chairs agreed on this proposed change.



Type of Changes. Please type 'X' for the appropriate revision(s):  Course	COURSE SUBJECT	ENSC	NUMBER	405W	TITLE	-	ne A: Project Desi ment, and entation	ign,		
Title  □ Description  ⊠ Equivalent □ Statement  WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  ENSC 405W - Capstone A: Project Design, Management, and Documentation (3)  This is the first course in a group-based, two-course capstone sequence: ENSC 405W, ENSC 440. Topics include group writing processes, project documentation and engineering design, group dynamics, engineering standards, project management, dispute resolution, intellectual property, entrepreneurship, and user interface design. These groups will be maintained for the completion of the capstone project in ENSC 440. Students must take ENSC 440 in the term directly following successful completion of ENSC 405W. Grades awarded in ENSC 405W are conditional on the successful completion of ENSC 440 in the subsequent term.  Prerequisite: (ENSC 105W or MSE 101W), ENSC 204, all with a minimum grade of C-, completion of a minimum of 22 units of required upper division ENSC courses, and completion of (or concurrent enrollment in) two upper division technical electives meeting the requirements of the program. Students are required to complete at least two co-ops before enrolling in ENSC 440 Capstone B. Capstone B must be taken in the term immediately following Capstone A. Enrollment into Capstone A is by approval of the department via Capstone application form.  Engineering Science students cannot take MSE 410, MSE 411, SEE 410W or SEE 411 for credit. Students who have taken (ENSC 304 and ENSC 305W) may not take	<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):									
WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using <u>underline</u> . If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under <u>Information about specific course components</u> if changing equivalent statement(s).  ENSC 405W - Capstone A: Project Design, Management, and Documentation (3)  This is the first course in a group-based, two-course capstone sequence: ENSC 405W, ENSC 440. Topics include group writing processes, project documentation and engineering design, group dynamics, engineering standards, project management, dispute resolution, intellectual property, entrepreneurship, and user interface design. These groups will be maintained for the completion of the capstone project in ENSC 440. Students must take ENSC 440 in the term directly following successful completion of ENSC 405W. Grades awarded in ENSC 405W are conditional on the successful completion of ENSC 440 in the subsequent term.  Prerequisite: (ENSC 105W or MSE 101W), ENSC 204, all with a minimum grade of C-, completion of a minimum of 22 units of <u>required</u> upper division ENSC courses, and completion of (or concurrent enrollment in) two upper division technical electives meeting the requirements of the program. Students are required to complete at least two co-ops before enrolling in ENSC 440 Capstone B. Capstone B must be taken in the term immediately following Capstone A. Enrollment into Capstone A is by approval of the department via Capstone application form.  Engineering Science students cannot take MSE 410, MSE 411, SEE 410W or SEE 411 for credit. Students who have taken (ENSC 304 and ENSC 305W) may not take		Un	its		Prere	equisite				
indicate added or new text using <u>underline</u> . If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under <u>Information about specific course components</u> if changing equivalent statement(s).  ENSC 405W - Capstone A: Project Design, Management, and Documentation (3)  This is the first course in a group-based, two-course capstone sequence: ENSC 405W, ENSC 440. Topics include group writing processes, project documentation and engineering design, group dynamics, engineering standards, project management, dispute resolution, intellectual property, entrepreneurship, and user interface design. These groups will be maintained for the completion of the capstone project in ENSC 440. Students must take ENSC 440 in the term directly following successful completion of ENSC 405W. <u>Grades awarded in ENSC 405W are conditional on the successful completion of ENSC 405W</u> . By the end of the subsequent term. Prerequisite: (ENSC 105W or MSE 101W), ENSC 204, all with a minimum grade of C-, completion of a minimum of 22 units of <u>required</u> upper division ENSC courses, and completion of (or concurrent enrollment in) two upper division technical electives meeting the requirements of the program. Students are required to complete at least two co-ops before enrolling in ENSC 440 Capstone B. Capstone B must be taken in the term immediately following Capstone A. Enrollment into Capstone A is by approval of the department via Capstone a pplication form. Engineering Science students cannot take MSE 410, MSE 411, SEE 410W or SEE 411 for credit. Students who have taken (ENSC 304 and ENSC 305W) may not take	Title 🗆	Des	scription		_					
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# EFFECTIVE TERM AND YEAR FOR CHANGES

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

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ピコレ	1 2021	
T'ai	1 2021	



The school does not wish to practice the withholding the 405W grade.						





SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE SUBJEC	SEE SEE	NUMBER	241	TITLE	Measurement, Analysis and Forecasting				
<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):									
Course number		Units		Prere	equisite 🗆				
Title [	]	Description			nivalent ⊠ itement				
indicate added or allows, drag the expand. Please reversecific course communication include engineer measurements, experiments. Pr	new text usindpoint of the view the "Equipments of the methods ring data repersor analys erequisite: PENSC 280, MS	ing underline. If you text box to male uivalency statem changing equivator collecting and presentation, profis, test of hypothesis.	ou need to e ke it bigger, a ents" section lent stateme d analysing e bability dens eses, regress 232. Corequi	nter mor as it will I n under II nt(s). ngineerin sity function, and of isite: MA'	nformation about  ng data. Topics ions, engineering design of TH 251. Students				
Fall, Spring, Sumn Fall 2021			textbox)						





The course descriptions are different. Besides, SEE 241 is normally taught by a P.Eng. designated instructor, which is an important factor in the accreditation process.





COURSE SU	J <b>BJECT</b> SE	E NUMBER	242	TITLE Computational Meth Engineers	nods for			
<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):								
Course number		Units		Prerequisite $\square$				
Title		Description		Equivalent ⊠ Statement				
expand. Plea specific cour  Apply num sustainable	se review the se component erical methode energy engi	e "Equivalency statents if changing equivalents if changing equivalents to solve engineering. Prerequisite	nents" sectionalent statem ng problem e: MATH 152	s, as it will not automatically on under Information about nent(s).  s with an emphasis on 2, MATH 232. Students s course for further credit.				
		EAR FOR CHANGES						
Fall 2021								





Page 2 of 2

# **RATIONALE** (must be included)

SEE 242 has a lab component and is normally taught by a P.Eng. designated instructor, both of which are important factors in the accreditation process. MACM 316 lacks the abovementioned characteristics.

# **COURSE MODIFICATION FORM**



SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE SU	OURSE SUBJECT MSE NU		310	TITLE Introduction to Electro- Mechanical Sensors and Actuators					
<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):									
Course number		Units		Prerequisite ⊠					
Title		Description		Equivalent $\square$ Statement					
WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  MSE 310 Introduction to Electro-Mechanical Sensors and Actuators (4)  This course provides an introduction to sensors and actuators for electromechanical, computer-controlled machines and devices. Topics include operating principles, design considerations, and applications of analog sensors, digital transducers, stepper motors, continuous-drive actuators, and drive system electronics. Component integration and design considerations are studied through examples selected from various mechatronic applications of machine tools, mechatronics, precision machines, robotics, aerospace systems, and ground and underwater vehicles. Laboratory exercises to strengthen the understanding of the course material are developed and required. component performance, system design and integration.  Prerequisite: MSE 221, MSE 222, MSE 280 or ENSC 380, MSE 251.  Students with credit for ENSC 387 may not take MSE 310 for further credit.									
Fall, Spring, Summer and year (please enter in textbox)									
Fall 2021  PATIONALE (must be included)									
RATIONALE(must be included)  This course is updated for the first time since 2007 to better reflect the needs of our student graduates and enable further updates to our curriculum. We have updated the list of prerequisites and the syllabus for the course.									



# SENATE COMMITTEE ON UNDERGRADUATE STUDIES

#### **EXISTING COURSE DELETION FORM**

1 OF 1 PAGE

COURSE SUBJECT	BUS	NUMBER	328	TITLE	International Co-op Practicum

#### **RATIONALE** (must be included)

Course was brought to SCUS in November 2018 to assist in capturing students who completed an international co-op within the Academic Progress Report (APR) process. Unfortunately this approval missed a step in consulting with Co-op on the introduction of a new course and how alternatives were available to address this identified gap. The course change caused unanticipated impact - a course deletion corrects the error.

### Context:

Currently all students completing an international work term are registered into section I1.00 of their first, second, third etc work term course (225, 325, 326, 327, 425). Having BUS 328 is problematic as its not clear

#### **EFFECTIVE TERM AND YEAR FOR CHANGES**

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

Fall 2021	
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#### PLEASE DO THE FOLLOWING:

- 1. Attach a program impact list along with your course deletion form. Contact the Senate and Academic Services Office (sfucal@sfu.ca) for a program impact list.
- 2. Once you have the program impact list, please review how deleting this course affects each program's requirements.
- 3. If more substantial changes are required to programs as a result of this deletion, please also submit a program modification form.
- 4. If no further changes other than deletion is required in program requirements, please list those programs in the box below:

- Business Co-operative Education Program							

5. Lastly, please conduct a course impact analysis, which reviews the effect of a course number change and/or course deletion on course prerequisites. For instructions on how to do a course impact analysis, please visit our page and click on "deleting a course" and review Step 2. Course Impact Analysis.





SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE SU	JBJECT	CMNS	NUMBER	349	TITLE		nment, Media and Inication		
<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):									
Course number		Un	nits		Prere	equisite	$\boxtimes$		
Title		De	escription		_	iivalent tement			
WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  An examination of how media, culture and communication shape public opinion and behaviour about environmental issues such as global warming, (un)sustainable resource use and pollution, with special attention to the impact of practices such as advertising, public relations, science and risk communication, journalism and advocacy communication upon public discourse about the environment, and the role of dialogue and deliberation in mediating and resolving conflict over environmental issues. Prerequisite: 45 units, including at least one upper division course in CMNS, DIAL, ENV, EVSC, GEOG or BISC, with a minimum grade of C									
_		ND YEAR FOI and year (ple		textbox)					
Summer 20	021								





The course focuses on different aspects on environmental issues and it makes sense to include ENV as part of the prerequisites.

COURSE SU	OURSE SUBJECT CMNS		NUMBER	ER 353 TITLE		Topics in Technology and Soc			
TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):									
Course number		Un	its		Prere	equisite 🗆			
Title		De	scription		_	ivalent 🗆 tement			
allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  Examination of the emergence and shaping of information and communication technologies in the digital age. Explores new media and social change between everyday life, social institutions, and various enterprises. Emphasis is placed on social context and relations of power. May repeat for credit if topic studied is different. This course can be repeated once for credit (up to a maximum of two times).									
		ID YEAR FOF and year (plea							
RATIONALE	(must be	e included)							
We would	ike to ex	plicit how ma	ny times st	udents ca	an take this co	ourse for credits.			





SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE SU	JBJECT	CMNS <b>NUMBER</b>	453	TITLE	Issues ir Society	the Information			
<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):									
Course number		Units		Prere	quisite				
Title		Description		_	ivalent tement				
allows, drag expand. Plea specific cour  Advanced new composociety, on	the endpose review se compose seminar to uter/compose one hand	text using <u>underline</u> . If yound of the text box to many the "Equivalency statem in the "Equivalency statem of the statem if changing equivalences is the information technologies and major public policy. This course can be repeated.	ke it big nents" sealent sta terplay , at the l	ger, as it will rection under Internent(s).  between contente of compression of compression of compression of compression of ther. May rejection of the compression o	emporary ehensive t	atically n about society and theories of redit if topic			
_	Summer a	ID YEAR FOR CHANGES and year (please enter in		)					
We would	like to exp	plicit how many times st	udents o	can take this co	ourse for o	credits.			



COURSE SU	BJECT	PLAN N	NUMBER	200	TITLE	Introdu	ction to Planning	
TYPE OF CH	ANGES. 1	Please type 'X' fo	or the app	ropriate revi	sion(s):			
Course number	$\boxtimes$	Units □ Prerequisite ⊠		$\boxtimes$				
Title		Desci	ription		-	ivalent tement		
allows, drag texpand. Please specific course.  PLAN 200  Students wiintroduce steettlements Prerequisite	the endp se review se compo 100 - Intr Il be expo udents to and com	v text using undo oint of the text by the "Equivalen onents if changi roduction to Plant osed to a broad of the role of a plant munity planning) REM 100, GEOG V 200 may not tak	box to mal ncy statem ing equiva ning (3) everview of nner while of in varying G 100, GE	ke it bigger, a ents" section lent stateme f the field of p exploring the g contexts wit OG 111, or E	os it will not under Ir nt(s).  Dlanning. The practice of hin Canact VSC 100,	The cours of planning and int.	natically on about  se will ng (human ternationally. mits. Students	
		ND YEAR FOR C and year (please		textbox)				
RATIONALE	(must be	e included)						
to potentiall the course is the pre-requ	ly apply t s currentl iisites, thi	o the planning pr y serving mostly is means that the	rogram at I upper-div course is 1	REM when the ision students not reaching it.	ey enter the looking to the looking the lo	heir secor for an ele d target g	ould enable student and year. However, ctive. Along with group. The material eficial for students	1

who are new to SFU to have the opportunity to take this course in their first year particularly as this

course has a B-Soc designation. The change from PLAN 200 to PLAN 100 does not involve creating a new course, as it will make use of the same introductory format and materials.



COURSE SUBJECT	PLAN	NUMBER	407	TITLE	Indigenous Governance and Resource Relationships		
TYPE OF CHANGES.	Please type 'X	X' for the app	propriate rev	vision(s):			
Course $\square$ number	Ur	nits		Pre	requisite 🗵		
Title $\square$	D€	escription			uivalent □ atement		
WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  PLAN 407 - Indigenous Governance and Resource Relationships (4)  Explores diverse Indigenous perspectives on governance, resource, land and water management, intergovernmental relations and economic development in the context of contemporary settler colonialism in Canada. Skills include critical thinking, anti-colonial, economic, political and policy analyses. Prerequisite: One of REM 207, ARCH 286, or any INDG course; and 75 units. or permission of instructor. Students with credit for REM 407 may not take this course for further credit.							
<b>EFFECTIVE TERM A</b> Fall, Spring, Summer							
Fall 2021							
RATIONALE (must b	e included)						
We are adding an additional prerequisite to ensure that students have a general understanding of Indigenous peoples and the challenges Indigenous communities face.							

and



COURSE SUBJECT	REM <b>NUMBER</b>	200	TITLE Introduction to Resource Environmental Managem	
TYPE OF CHANGES.	Please type 'X' for the app	oropriate rev	rision(s):	
Course $\square$ number	Units		Prerequisite 🖂	
Title $\square$	Description		Equivalent □ Statement	
REM 200 - Introduce  Explores the natural management and de making. Provides a strategic thinking for natural resource dec	ction to Resource and Environmental planning, ission making and approach TREM 100, GEOG 100, or	ronmental Ma tions of resour ledge can be unature and ma socio-economies for address	anagement in Canada (3)  arce and environmental decisionanagement of natural resources, nic and biophysical trade-offs in	
	ND YEAR FOR CHANGES and year (please enter in			
Fall 2021				
RATIONALE (must b	e included)			
and once they have	•	ite. Retaining	n their second term if it is available g the course prerequisite means not be appropriate.	



COURSE SUBJECT	REM <b>NUMBER</b>	202W	TITLE Technical Communication Environmental Profession and Planners	
TYPE OF CHANGE	<b>S.</b> Please type 'X' for the ap	propriate re	evision(s):	
Course number	Units		Prerequisite 🖂	
Title	Description		Equivalent □ Statement	
allows, drag the enexpand. Please revenue specific course con REM 202W - Technology REM 202W will to Students will impresource manager progress to the cromanuscripts, technology themselves with a program, Zotero.	dpoint of the text box to me iew the "Equivalency state aponents if changing equivalence if changing equivalence if changing equivalence if changing equivalence in the communication for Execution and planning. REM 202 exation and presentation of princial reports, briefing notes, reference-management soft	Environmental ite technical ite technical iting-intensive 2W will revieofessional do and emails. Sware; the couat least 30 un	nformation clearly and concisely. e assignments related to the fields of w the fundamentals of writing and comments including journal	
	AND YEAR FOR CHANGE er and year (please enter i			
RATIONALE (mus	t be included)			
We are removing	g the minimum unit prereq rse in a timely fashion. The		as been a barrier for students to prerequisites are sufficient for	



COURSE SUE	BJECT	REM	NUMBER	356W	TITLE	Environmental Policy			
TYPE OF CH	ANGES.	Please type	'X' for the app	propriate rev	vision(s):				
Course number		U	Jnits		Pre	requisite 🗵			
Title		D	Description			quivalent 🗌 tatement			
WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using <u>underline</u> . If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under <u>Information about specific course components</u> if changing equivalent statement(s).									
	EFFECTIVE TERM AND YEAR FOR CHANGES Fall, Spring, Summer and year (please enter in textbox) Fall 2021								
RATIONALE (must be included)									
consistent campus. Ho	with oth owever,	ier similar R experience l	EM courses a	nd open up t at a minimal	the cours earned c	e to more students across redit requirement will year.			



COURSE SU	ВЈЕСТ	REM	NUMBER	406	TITLE Indigenous People and Management			
TYPE OF CH	IANGES.	Please type '〉	ζ' for the app	oropriate rev	vision(s):			
Course number		Ur	nits		Pre	requisite 🗵		
Title		De	escription			quivalent 🗌 tatement		
WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  REM 406 - Indigenous People and Co-management (4)  Introduces several basic co-management models, a framework for analyzing conditions which permit co-management institutions to develop and thrive, the dilemmas of communities involved in co-management and the challenges for governments working with them, with special but not exclusive attention to Canadian Indigenous communities. Prerequisite: REM 356 and One of REM 207, ARCH 286, or any INDG course; and 75 units.								
		ND YEAR FO						
RATIONALI	E (must b	e included)						
						have a general ous communities face.		



COURSE SU	ВЈЕСТ	REM	NUMBER	407	TITLE	_	us Governance and Relationships
TYPE OF CH	IANGES.	Please type ''	X' for the app	oropriate rev	vision(s):		
Course number		Ur	nits		Pre	requisite	$\boxtimes$
Γitle		De	escription			quivalent catement	
REM 407  Explores of management contempore economic INDG cou	- Indigen diverse Inent, intergrary settle, political	w the "Equiva onents if cha ous Governan digenous pers governmental or or colonialism and policy an 75 units. or pe	nging equivance and Resource and Resource on grelations and in Canada. Salyses. Prerections of in	alent statemente Relations overnance, reconomic de kills include quisite: One o	ent(s). ships (4) esource, lavelopment critical the of REM 2	and and wa It in the con inking, anti 07, ARCH	ter text of -colonial, 286, or any
		ND YEAR FO and year (ple					
RATIONALI			requisite to	encure that	students	have a gen	eral
		dditional pre ndigenous pe					



COURSE SU	ВЈЕСТ	REM	NUMBER	495	TITLE	Resource and Environmental Management Capstone
TYPE OF CH	IANGES.	Please type '	X' for the ap	propriate re	vision(s):	
Course number		U	nits		Pre	requisite 🗵
Title		D	escription			quivalent ⊠ tatement
REM 495  By guiding interdiscip integrate the will work of addresses a permission	- Resource g students linary res ne knowle corrobora a real-word of instru	earch project, edge and skills tively to conc eld environme	nmental Mana nception, dev this course we sthey gained eive, investige ntal issue of the	relopment and vill provide state and presented at the students of REM 491	stone (4) d communated communated the communated the communated the communated the communated the communated the community of	nication of a novel ith an opportunity to iduate degree. Students ginal research project that gerequisite: 90 75 units-or I Studies taken as the
		ND YEAR FO and year (pl				
RATIONAL	E (must b	e included)				
	ducing th		te to ensure s	students can	complet	e their capstone prior to



COURSE SU	ВЈЕСТ	REM	NUMBER	221	TITLE	System: Environ	s Thinking and the nment
TVDE OF CU	ANCES	Dloggo tym	e 'X' for the app	ropriato ro	zicion(c):		
THE OF CIE	ANGES.	r rease typ	e x for the app	n opi iate i ev	/151011(5).		
Course number			Units	$\boxtimes$	Prere	equisite	
Title			Description		_	uivalent itement	
WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  REM 221 - Systems Thinking and the Environment (3) (4)  Introduces systems thinking in the context of environmental and sustainability challenges using system archetypes and system dynamics theory. Analytical and modeling techniques are applied to understand and project systems complexity. Prerequisite: One of REM 100, or GEOG 100, or GEOG 111, or EVSC 100. Students with credit for ENV 221 may not take this course for further credit. Quantitative.							
EFFECTIVE TERM AND YEAR FOR CHANGES Fall, Spring, Summer and year (please enter in textbox)  Fall 2021  RATIONALE (must be included)  At present the tutorial is not long enough to support learning and understanding of the							
course mat	erial. Th	ne purpose	e of the unit chars so the profes	ange is to in	crease the	e contact	



COURSE SUBJECT	REM	NUMBER	320W	TITLE	Ethics and the Environmen				
TYPE OF CHANGES	<b>S.</b> Please type ''	X' for the app	oropriate rev	vision(s):					
Course	Uı	nits		Prei	requisite 🛚				
Title	De	escription		-	uivalent □ atement				
WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  REM 320W - Ethics and the Environment (3)  An introduction to the field of environmental ethics for non-specialists. Addresses questions such as what obligations we have to future generations and the natural world, as well as the extent of these obligations. Prerequisite: Students must have earned at least 45 units. Philosophy Majors and Minors may not take this course for credit towards their major or minor degree. Students who have taken PHIL 333-3 or ENV 399-3 "Special Topics in Environmental Ethics" prior to or in 2011 and students with credit in ENV 320W or PHIL 328-3 may not enroll in this course for further credit. Writing.									
Fall, Spring, Summer Fall 2021  RATIONALE (must Removing unnecessity)	er and year (plo	ease enter in	textbox)	requisite					

COURSE SU	<b>BJECT</b> SD	NUMBER	281		Sustainable Comm Sustainable World	unities,				
<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):										
Course number		Units		Prereg	uisite 🗵					
Title	$\boxtimes$	Description		•	valent 🗆 ement					
<b>WORDING/DESCRIPTION EDITS.</b> Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box										

SD 281 - Sustainable Communities, Sustainable World Introduction to Sustainability (3)

specific course components if changing equivalent statement(s).

allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under <u>Information about</u>

Introduces the challenges and opportunities for developing sustainable communities and a sustainable world, through the framework of the Sustainable Development Goals (SDGs). Builds an understanding of strengths and weaknesses of conventional approaches to development and of sustainable development. and alternative perspectives around sustainability (e.g. Indigenous, just sustainabilities etc). Students will also learn from the practical experience of diverse experts and sustainability professionals. Conventional approaches to sustainable development will be critiqued to ensure considerations for equity and social justice. Emphasis on urban areas in Highlights will be showcased from the Global North and Global South. Prerequisite: 30 units. Students with credit for SCD 201 or REM 201 or REM 281 may not complete this course for further credit. Breadth-Social Sciences.

## **EFFECTIVE TERM AND YEAR FOR CHANGES**

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

Fall 2021
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### **RATIONALE** (must be included)

Responsibility for the SD Program and for all SD courses has been shifted to REM and this provides an opportunity to rethink and update the core SD courses to better reflect current thinking about sustainability. The new title better reflects the course material. SD 281 is intended to be the introductory course for the SD program, as well as being a 200-level breadth-social science course. Making this clear in the title signifies to students the type and level of content that will be taught in the course. Since the SD program has been subsumed into REM, some of the core courses are now being taught by REM faculty. The description of the course has been updated to reflect the new approach and material of the course. The 30-credit prerequisite has been removed to allow more students to enroll in the course, as well as better reflecting the introductory nature of the course.

COURSE SU	ВЈЕСТ	SD <b>NUMBER</b>	481	TITLE Sustainable Communities Leadership Lab			
<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):							
Course number		Units		Prerequisite ⊠			
Title		Description		Equivalent $\square$ Statement			
<b>WORDING/DESCRIPTION EDITS.</b> Indicate deleted or changed text using strike through, indicate added or new text using <u>underline</u> . If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under <u>Information about specific course components</u> if changing equivalent statement(s).							
Students develop the skills to lead change toward sustainability at the community level. Starting with a process of analyzing a particular social or environmental challenge, and using a collaborative approach, they develop a promising idea into a feasible plan for a project or social enterprise. Engages students in understanding critical concepts and issues of sustainability at different scales and how they related to policy, management, leadership, and governance in a range of context and across different sectors (thinking about how local movements can come to influence national and international governance). Explores and analyzes the history of sustainability action, how change happens, the role of different levels of governance, current sustainability initiatives, and prospects for how to create change in the future.  Prerequisite: One of PLAN 100, REM 100, or SD 281; and 60 units, and SD 281 or REM 281 or SD 201 or DEVS 201 or SCD 201 or REM 201 or admission to the Post Baccalaureate Diploma in Sustainable Development. Students with credit for SCD 401 or REM 401 or REM 481 may not complete this course for further credit.							
		ID YEAR FOR CHANGES and year (please enter in					



Responsibility for the SD Program and for all SD courses has been shifted to REM and this provides an opportunity to rethink and update the core SD courses to better reflect current thinking about sustainability. For there to be a more natural progression between SD 281, SD 381, and SD 481, the course title and description has been changed. The new title better reflects the new course content. The new course description focuses on national and global sustainable development efforts, while SD 381 focuses on the community and city-level. Rathan than have one course focus on local issues, and the other on international issues, we have re-organized the courses to focus on scales, but to include both local and international material in both courses. The Post Baccalaureate Diploma in Sustainable Development has been removed from the prerequisite because this program no longer exists. We have added a course prerequisite to SD 481 (one of PLAN 100, REM 100, or SD 281) to ensure that students taking this course have a foundation or basic knowledge of sustainable development.





COURSE SU	<b>BJECT</b> SI	D NUMBER	381	TITLE		g Sustainable inities: Concepts and
<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):						
Course number		Units		Prere	equisite	$\boxtimes$
Title	$\boxtimes$	Description		_	uivalent atement	
WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  SD 381 - Building Sustainable Communities: Concepts and Cases (4)  Engages students in understanding how to plan and cultivate sustainability at the community and city level, taking into consideration the environmental, economic, and social aspects of development. Explores and analyzes policy instruments, planning tools, and strategies from around the world for engaging people and institutions in building sustainable communities. Prerequisite: Completion of One of PLAN 100, REM 100, or SD 281; and 45 units, or admission to the Post Baccalaureate Diploma in Sustainable Development. Students with credit for SCD 301 or REM 301 or REM 381 may not complete this course for further credit. Breadth-Social Sciences.  EFFECTIVE TERM AND YEAR FOR CHANGES Fall, Spring, Summer and year (please enter in textbox)						
RATIONALE (must be included)						
Responsibility for the SD Program and for all SD courses has been shifted to REM and this provides an opportunity to rethink and update the core SD courses to better reflect current thinking about sustainability. The title of the course has changed because the current one is too long. The new one is more direct. Previously SD 301 and SD 381 had remarkably similar titles, so the ": Concepts and Cases" was needed to distinguish the two courses. This is no longer needed. The Post Baccalaureate Diploma in Sustainable Development has been removed from the						

prerequisite because this program no longer exists. We have added a course prerequisite to SD 381 (one of PLAN 100, REM 100, or SD 281) to ensure that students taking this course have a

foundation or basic knowledge of sustainable development.





COURSE SU	ВЈЕСТ	SD	NUMBER	401	TITLE	Sustaina Studio	able Development Goals	
<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):								
Course number		Uni	Units		☐ Prerequisite ⊠		$\boxtimes$	
Title		Des	scription		-	iivalent tement	$\boxtimes$	
WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  SD 401 - Sustainable Development Goals-Studio (4)  Engages students in creating innovative solutions to real-world challenges of sustainability and development, using studio-based approaches. Explores the Sustainable Development Goals as a-mechanisms for effective social and environmental change governance in the context of Global North South relations, and develops policies and strategies for implementing sustainability in different locations and at different scales. the Goals at local and global scales. Prerequisite: SD 281; one of SD 381 or SD 481; and 60 75 units. or admission to the Post Baccalaureate Diploma in Sustainable Development. Recommended: SD 281 or equivalent. Students with credit for DEVS 401 may not take this course for further credit.								
EFFECTIVE TERM AND YEAR FOR CHANGES Fall, Spring, Summer and year (please enter in textbox)								
Fall 2021				,				



Responsibility for the SD Program and for all SD courses has been shifted to REM and this provides an opportunity to rethink and update the core SD courses to better reflect current thinking about sustainability. The course title was changed so the course was not explicitly connected to, or related to, the UN's Sustainable Development Goals (SDG). The term sustainable development is broader and is the same name as the program. The course description was also changed to reflect the shift away from explicitly focusing on the SDGs and use more general/generic language. The Post Baccalaureate Diploma in Sustainable Development has been removed from the prerequisite because this program no longer exists. DEVS 401 was removed because these courses are significantly different now.

We have added course prerequisites to SD 401 (SD 281; one of SD 381 or SD 481) to ensure that students taking this course have a solid foundation and strong understanding of sustainable development. We have also changed the prerequisite units from 60 to 75 to single to students that this course should be taken later in their degree, and after the other SD courses. The revised prerequisites will also limit who is eligible and allow the course to be tailored to a knowledgeable student group.





Simon Fraser. University TASC2 8800 8888 University Drive Burnaby, BC Canada V5A 1S6

#### **MEMORANDUM**

To: Kris Nordgren, Assistant Registrar, Senate and Academic Services From: Paul Kingsbury, FENV, Chair, UCC

January 20, 2021

# Re: Request to Temporarily Withdraw Courses

Dear Kris,

Please find below a list of various courses, which REM would like to Temporarily Withdraw. I am also enclosing a memo from Duncan Knowler (REM's Chair of the Undergraduate Studies Committee), which confirms the official approval, the rationales, and desired effective date of Fall 2021.

REM 281, REM 356, REM 381, REM 481, SD 301

Thank you for your work. Please let me know if you have any questions about the above or require any further information.

Sincerely,

Paul/

Dr. Paul Kingsbury

Associate Dean, Undergraduate, Faculty of Environment



**MEMORANDUM** 

ATTENTION Senate Committee on Undergraduate Studies DATE January 5, 2021

FROM Duncan Knowler. PAGES 2

Chair, REM Undergraduate Program Committee

**RE:** Temporary withdrawal of REM 281 - Sustainable Communities, Sustainable World, REM 356 -

Environmental Policy, REM 381 - Building Sustainable Communities: Concepts and Cases, REM 481 - Sustainable Communities Leadership Lab, SD 301 - Building a Sustainable World: Concepts and

Cases

Dear SCUS,

On behalf of the REM Undergraduate Program Committee, I request your approval to mothball the following courses:

REM 281 - Sustainable Communities, Sustainable World

REM 356 - Environmental Policy

REM 381 - Building Sustainable Communities: Concepts and Cases

REM 481 - Sustainable Communities Leadership Lab

SD 301 - Building a Sustainable World: Concepts and Cases

In the case of REM 356, we would like to suspend this course because we are currently offering only its W equivalent REM 356W, which is required and fulfills the upper division W requirement for our majors. We don't intend to offer REM 356 in the foreseeable future. However, in case there should be some reason to offer the non-W version of the course we would like to keep it "on the books", rather than to delete it.

We wish to suspend REM 281, REM 381 and REM 481, as these are cross-listed versions with Sustainable Development equivalents (SD 281, SD 381 and SD 481). Now that the SD program has been transferred to REM there is no need (nor desire) to split the enrollments nor sustain the added administrative burden associated with keeping the cross-listed REM course.

Finally, we would like to suspend SD 301 as we have had difficulty recruiting instructors for this course and it has not been offered regularly. Additionally, did not fit well with the revisions to the SD program we are bringing forward for approval. However, since we may wish to reconsider a place for this course in future adjustments to the SD program we prefer to keep it available rather than delete it at this time.

No other students, faculty or staff would be affected by these course suspensions. There are no resources to be reallocated once they are suspended and the suspensions would have no impact on other departments or faculties. For example, REM Major students following earlier versions of our program requirements (e.g. Fall 2017 entry), when the calendar lists only REM 356, can take the W version of the course to fulfill this requirement.

If you have any questions, or require further information, please contact me.



Thank you,

Duncan Knowler Chair, REM Undergraduate Program Co	mmittee		
Faculty Approval			
Faculty Undergraduate Studies Committee	Signature	Date	
Senate Committee on Undergraduate Stu	idies Approval		
Senate Committee on Undergraduate Studies	Signature	Date	





COURSE SUI	BJECT BI	PK NUMBER	<b>4</b> 02	TITLE Mechanical Behavior of Biological Tissues			
<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):							
Course number		Units		Prerequisite ⊠			
Title		Description		Equivalent $\square$ Statement			
indicate added allows, drag the expand. Please specific course	WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).						
Prerequisite: BPK 201 and BPK 306.							
EFFECTIVE TERM AND YEAR FOR CHANGES Fall, Spring, Summer and year (please enter in textbox)							
Fall 2021							
RATIONALE (must be included)							
Content additions to BPK 306 including muscle, bone and connective tissue physiology make it an appropriate prerequisite for BPK 402.							

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Page 1 of 1

COURSE SUI	ВЈЕСТ	ВРК	NUMBER	448	TITLE	Rehabi Contro	litation of Movemer l
TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):							
Course number		Ì	Units		Prer	equisite	$\boxtimes$
Title		]	Description		_	uivalent atement	
allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  This course is aimed at students interested in neuromuscular rehabilitation. Students will learn about the pathological origins of movement disorders associated with diseases or trauma that cause impaired function of sensory and motor systems. The course will be focused on the stages and strategies for recovery of voluntary control of essential functions. The range of rehabilitation interventions available to assist recovery and restore voluntary control will be explored, with special emphasis on advanced techniques to restore control of movement and bodily functions in paralyzed people.  Prerequisite: BPK 201 or 207, and BPK 306, or for biomedical engineering students, BPK 201, and 208 and 308.							
EFFECTIVE TERM AND YEAR FOR CHANGES Fall, Spring, Summer and year (please enter in textbox) Fall 2021 RATIONALE (must be included)							
BPK 448 up BPK 308 wi			tle changes in	n course	delivery an	ıd course	offerings.



COURSE SUI	BJECT EAS	SC NUMBER	101	TITLE Dynamic Earth		
TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):						
Course number		Units		Prerequisite		
Title		Description		Equivalent □ Statement		
WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  FROM: Origin and character of minerals, rocks, Earth structure, Earth surface processes and plate tectonic theory. Primarily designed to deliver prereq. information to EASC majors/honours and students pursuing degrees in other Departments and Faculties that require a strong foundational course in Earth Science. Breadth Science.						
T0: <u>Dynamic Earth offers an introduction to minerals, rocks, geologic resources and processes</u> . <u>Plate tectonics is the unifying theory of geology and is the focus as we learn how the Earth changes over geologic time and results in the formation of volcanoes and mountain belts, faults, folds and earthquakes. Breadth-Science.</u>						
EFFECTIVE TERM AND YEAR FOR CHANGES Fall, Spring, Summer and year (please enter in textbox)						
Fall 2021						
RATIONALE (must be included)						
The revise	d course desc	ription better reflec	cts the co	urse topics.		



TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):  Course
WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  FROM: An introduction to the range of geological hazards that affect the Earth, the environment and humanity. Topics covered will include the hazards and risks related to volcanic eruptions, earthquakes, landslides and avalanches, tsunamis, geomagnetic storms and other potentially cataclysmic events. The forecasting and possible mitigation of these geohazards will also be investigated. Students may not take EASC 104 for credit towards EASC major or minor program requirements. Students with credit for GEOG 312 may not take this course for further credit. Breadth-Science.  TO: Explore the range of geological hazards that affect the Earth, our environment and humanity. Topics will include the hazards, risks and processes associated with potentially cataclysmic events such as volcanic eruptions, earthquakes, landslides, and tsunamis. The forecasting and mitigation of the impacts of these hazards will also be
WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  FROM: An introduction to the range of geological hazards that affect the Earth, the environment and humanity. Topics covered will include the hazards and risks related to volcanic eruptions, earthquakes, landslides and avalanches, tsunamis, geomagnetic storms and other potentially cataclysmic events. The forecasting and possible mitigation of these geohazards will also be investigated. Students may not take EASC 104 for credit towards EASC major or minor program requirements. Students with credit for GEOG 312 may not take this course for further credit. Breadth-Science.  TO: Explore the range of geological hazards that affect the Earth, our environment and humanity. Topics will include the hazards, risks and processes associated with potentially cataclysmic events such as volcanic eruptions, earthquakes, landslides, and tsunamis. The forecasting and mitigation of the impacts of these hazards will also be
indicate added or new text using <u>underline</u> . If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under <u>Information about specific course components</u> if changing equivalent statement(s).  FROM: An introduction to the range of geological hazards that affect the Earth, the environment and humanity. Topics covered will include the hazards and risks related to volcanic eruptions, earthquakes, landslides and avalanches, tsunamis, geomagnetic storms and other potentially cataclysmic events. The forecasting and possible mitigation of these geohazards will also be investigated. Students may not take EASC 104 for credit towards EASC major or minor program requirements. Students with credit for GEOG 312 may not take this course for further credit. Breadth-Science.  TO: Explore the range of geological hazards that affect the Earth, our environment and humanity. Topics will include the hazards, risks and processes associated with potentially cataclysmic events such as volcanic eruptions, earthquakes, landslides, and tsunamis. The forecasting and mitigation of the impacts of these hazards will also be
credit. Breadth-Science.



COURSE SU	BJECT EAS	SC NUMBER	108	TITLE Exploring the Solar System			
<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):							
Course number		Units		Prerequisite			
Title		Description	$\boxtimes$	Equivalent □ Statement			
allows, drag expand. Pleaspecific countries of the plans and the plans are supported by the Earth, history of credit town to Explore and interplane	WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  FROM: An introduction to the geology of our solar system through a comparative survey of the planets. Emphasis will be on the geology of the Earth and how we can use this knowledge to learn more about the neighboring planets. A wealth of accessible information now exists from which we can attempt to reconstruct the geological history of each planetary surface in our solar system. Comparative planetology will be used to explore such topics as the structure and origin of the solar system, the origin and fate of the Earth, the importance of water in the solar system, the formation and geological history of planetary lithospheres and atmospheres. Students may not use EASC 108 for credit towards Earth Sciences major or minor program requirements. Breadth-Science.  TO: Explore our celestial neighbourhood through a comparative study of the planets, moons and asteroids of our solar system. Students will use the latest information from interplanetary missions to study topics including the formation of the solar system, the origin and fate of the Earth, and the search for extraterrestrial life. Breadth-Science.						
EFFECTIVE TERM AND YEAR FOR CHANGES Fall, Spring, Summer and year (please enter in textbox)  Fall 2021  RATIONALE (must be included)							
The revised course description better reflects the course topics.							



LADE VE CE	IANCES Dla	ase type 'X' for the ap	nronriat	a ravician(s):	
I I F E OF CI	iandes. Fie	ase type A for the ap	propriac	e revision(s).	
Course number		Units		Prerequisite $\square$	
Γitle		Description	$\boxtimes$	Equivalent $\square$ Statement	
WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  FROM: The study of the evolution of the Earth, the geological time scale, fossils and evolution, stratigraphic concepts, geological history of western Canada. Prerequisite: EASC 101 with a grade of C- or better. Breadth-Science.					
T0: The Earth has evolved dramatically over its 4.6 billion-year history. We explore the evolution of Earth's tectonic plates, oceans and atmosphere through time. We also review the appearance of life, its evolution and diversification, biological-geological interactions, and the occurrence and impact of mass extinction events. Prerequisite: EASC 101 with a grade of C- or better. Breadth-Science.					
explore the time. We biological extinction Science.	ne evolution also review I-geological n events. Pr	n of Earth's tectonic the appearance of interactions, and the erequisite: EASC 10	plates, life, its e ne occur 1 with a	oceans and atmosphere through evolution and diversification, rence and impact of mass	
explore the time. We biological extinction Science.  EFFECTIVE Fall, Spring,	ne evolution also review I-geological n events. Pr	n of Earth's tectonic the appearance of interactions, and th	plates, life, its end occur 1 with a	oceans and atmosphere through evolution and diversification, erence and impact of mass a grade of C- or better. Breadth-	
explore the time. We biological extinction Science.	ne evolution also review I-geological n events. Pr	of Earth's tectonic the appearance of interactions, and the erequisite: EASC 10	plates, life, its end occur 1 with a	oceans and atmosphere through evolution and diversification, erence and impact of mass a grade of C- or better. Breadth-	
explore the time. We biological extinction Science.  EFFECTIVE Fall, Spring, Fall 2021	ne evolution also review I-geological n events. Pr	y the appearance of interactions, and the erequisite: EASC 10  YEAR FOR CHANGES d year (please enter in	plates, life, its end occur a with a	oceans and atmosphere through evolution and diversification, erence and impact of mass a grade of C- or better. Breadth-	
explore the time. We biological extinction Science.  EFFECTIVE Fall, Spring, Fall 2021	ne evolution also review I-geological n events. Pr TERM AND Summer and	n of Earth's tectonic the appearance of interactions, and the erequisite: EASC 10 YEAR FOR CHANGES d year (please enter in	plates, life, its ene occur 1 with a	oceans and atmosphere through evolution and diversification, rence and impact of mass a grade of C- or better. Breadth-	
explore the time. We biological extinction Science.  EFFECTIVE Fall, Spring, Fall 2021	ne evolution also review I-geological n events. Pr TERM AND Summer and	y the appearance of interactions, and the erequisite: EASC 10  YEAR FOR CHANGES d year (please enter in	plates, life, its ene occur 1 with a	oceans and atmosphere through evolution and diversification, rence and impact of mass a grade of C- or better. Breadth-	
explore the time. We biological extinction Science.  EFFECTIVE Fall, Spring, Fall 2021	ne evolution also review I-geological n events. Pr TERM AND Summer and	n of Earth's tectonic the appearance of interactions, and the erequisite: EASC 10 YEAR FOR CHANGES d year (please enter in	plates, life, its ene occur 1 with a	oceans and atmosphere through evolution and diversification, rence and impact of mass a grade of C- or better. Breadth-	



COURSE SU	BJECT	EASC NUMBER	103	TITLE	The Rise and Fall of the Dinosaurs	
<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):						
Course number		Units		Prere	equisite 🗆	
Title		Description		_	uivalent ⊠ ntement	
indicate adde allows, drag expand. Pleas specific cours  EFFECTIVE TEFFECTIVE	WORDING/DESCRIPTION EDITS. Indicate deleted or changed text using strike through, indicate added or new text using underline. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under Information about specific course components if changing equivalent statement(s).  EFFECTIVE TERM AND YEAR FOR CHANGES  FROM: Class Dinosauria and how our understanding of this extinct group continues to evolve in the light of new discoveries. Topics include the rise of the dinosaurs, criteria for the recognition of the different groups, fossil data regarding dinosaur metabolism, evidence of dinosaur behavior, possible evolutionary relationships with birds, and theories of dinosaur extinction. Students may not take EASC 103 for credit towards EASC major or minor program requirements. Students with credit for EASC 103W may not take this course for further credit. Breadth-Science.  TO: Dinosaurs ruled our planet for nearly 150 million years until the abrupt extinction of all non-avian (non-bird) dinosaurs, approximately 66 million years ago. We examine geologic time, fossils and biological classification, and investigate the rise and fall of the theropods, sauropods, ornithopods, stegosaurs, ankylosaurs, ceratopsians, and pachycephalosaurs. Breadth-Science.					
Fall 2021	Fall, Spring, Summer and year (please enter in textbox)  Fall 2021					
RATIONALE (must be included)						
The revised	RATIONALE (must be included)  The revised course description better reflects the course topics.					



COURSE SU	U <b>BJECT</b> EA	ASC NUMBER	411	TITLE Terrain Analysis		
<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):						
Course number		Units		Prerequisite 🗵		
Title		Description		Equivalent $\square$ Statement		
<b>WORDING/DESCRIPTION EDITS.</b> Indicate deleted or changed text using strike through, indicate added or new text using <u>underline</u> . If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under <u>Information about specific course components</u> if changing equivalent statement(s).						
FROM: Prerequisite: EASC <u>206</u> and <u>209W</u> . All with a grade of C- or better.						
TO: Prerequisite: EASC 209W and one of EASC 308, EVSC 305 or GEOG 310. All with a grade of C- or better.						
EFFECTIVE TERM AND YEAR FOR CHANGES Fall, Spring, Summer and year (please enter in textbox)						
Fall 2021						
RATIONALE (must be included)						
students	for EASC 411	. To allow Environmen	ntal Science	EASC 308) that better prepares students and Physical Geography d school courses (EVSC 305 and GEOG		
		een presented to Jeren nd both find them acc		(Environmental Science) and Lance		



COURSE SUBJECT	MBB <b>NUMBER</b>	441	TITLE Bioinformatics	_			
TYPE OF CHANGES.	<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):						
Course number	Units		Prerequisite X				
Title	Description		Equivalent Statement				
indicate added or net allows, drag the endp expand. Please review	<b>WORDING/DESCRIPTION EDITS.</b> Indicate deleted or changed text using strike through, indicate added or new text using <u>underline</u> . If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under <u>Information about specific course components</u> if changing equivalent statement(s).						
Examining the use of macromolecular method developme	MBB 441 – Bioinformatics (3)  Examining the use of, and theory behind, bioinformatic software and algorithms for the analysis of macromolecular data. Includes consideration of recent literature and discussion of ethics in method development and analysis. <a href="Perequisite: MBB 243 or 3 units of CMPT or equivalent with a minimum grade of C">Perequisite: MBB 243 or 3 units of CMPT or equivalent with a minimum grade of C</a> , or permission of the instructor; MBB 331 and MBB 342, with a minimum grade of C.						
Fall, Spring, Summer Fall 2021							
RATIONALE (must be included)  Students are required to take MBB 342 (Introductory Genomics & Bioinformatics) as a prerequisite for MBB 441, which ensures that they have the computer science background necessary to succeed in this course. However some students request an exemption from the computer science prerequisites for MBB 342 (MBB 243: Data Analysis for Molecular Biology and Biochemistry or 3 units of CMPT or equivalent), meaning that they are free to take MBB 441 without any CS background. Adding these same prerequisites to MBB 441 addresses this loophole.							



COURSE SU	вјест А	CMA <b>NUMBER</b>	210	TITLE Mathematics of Composition	und	
<b>TYPE OF CHANGES.</b> Please type 'X' for the appropriate revision(s):						
Course number		Units		Prerequisite		
Title	$\boxtimes$	Description	$\boxtimes$	Equivalent ⊠ Statement		
indicate adde allows, drag to expand. Please specific course ACMA 2 and Appl Measurement immediate, reinvestment schedules and duration, coof immunization methods. In portion of pathe Casualty	d or new teache endpoints the endpoints of review the secomponer.  10 - Mathications (Interest due, perpetual trate, portford sinking functions). Interest rate die art of the sylvactuarial Second sinking functions.	ext using <u>underline</u> . If to of the text box to made "Equivalency statements if changing equivalence of Competitions of Compet	you need to ake it bigger nents" section alent statem ound Interest on of value. Yield rates: Ar methods. In securities. Carield curves: Ar in Canada. Ithe Society of the society of the society of the securities.	Basic annuities Annuities: cash flow analysis, coans and amortization ash flows: yield rates, spot rates, forward rates.; mortgages, depreciation Covers the interest theory of Actuaries and Exam 2 of		
_		YEAR FOR CHANGES year (please enter in			-	



The changes to the syllabus are minor, reflecting a slight change of focus in the corresponding professional exam (FM). Mostly, we are changing the course number and name to signal a new direction to students: ACMA 210 was a "gatekeeper" course for the actuarial science major and had a reputation that it is too demanding. ACMA 201 is intended to be moderately challenging but not intimidating.

We are adding a reference to CAS exam 2 since some of our students pursue actuarial designation under the CAS's education system, as opposed to the SOA's.



COURSE SUBJECT ACMA NUMBER 320 TITLE Actuarial Mathematics I

TYPE OF CHA	<b>NGES.</b> Please ty	pe 'X' for the app	propriate revision	on(s):	
Course number		Units		Prerequisite	$\boxtimes$
Title	$\boxtimes$	Description		Equivalent Statement	

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using strike through, indicate added or new text using <u>underline</u>. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under <u>Information about specific course components</u> if changing equivalent statement(s).

# ACMA 320-301 - Long-Term Actuarial Mathematics I (5) (3)

[requested short title: Long-Term Actuarial Math I]

<u>Life tables, basic survival models. Basic life insurance and annuities for single life:</u> present value random variables, premium calculations, reserves. <u>Computer applications for pricing and reserving for life insurance portfolios.</u> Covers part of the syllabus for Exam LTAM of the Society of Actuaries<del>, and practical applications such as computational aspects of pricing and reserving and risk measurement of insurance portfolios. This course is accredited under the University Accreditation Program of the Canadian Institute of Actuaries. Prerequisite: <u>STAT 285 and ACMA 201 (or 210)</u>, with a minimum grade of C. <u>Corequisite: STAT 285.</u> Quantitative.</del>

Students with credit for ACMA 320 cannot take ACMA 301 for further credit.

### **EFFECTIVE TERM AND YEAR FOR CHANGES**

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

P = 11	20	21
Fall	<b>2</b> U	121



We are reorganizing the ACMA 320/425 sequence, with most of the material now fitting into 6 units (3+3) instead of 8 (5+3). The content in the new 301/401 sequence captures 85% of the content from the prior syllabi, allowing these courses to maintain their accreditation by the Canadian Institute of Actuaries while avoiding the burden of a 5-unit course for both students and faculty. The new split, which has ACMA 401 covering many of the same topics as 301 (survival models, premium calculations, reserves) but with more advanced features, allows for repetition of key concepts and makes the first course in the sequence less demanding. The new course title and number signal the new direction.

Also, accreditation under the CIA's University Accreditation Program, while expected to continue, is technically renewable annually so should not be in the calendar.

For the prerequisites:

ACMA 210 is changing to ACMA 201.

STAT 285 now covers less probability so it's not as critical to this course as it was before.



COURSE SU	J <b>BJECT</b> AC	CMA NUMBER	340	TITLE Financial Economics for Actuaries			
TYPE OF CH	ANGES. Pleas	se type 'X' for the ap	propriate re	vision(s):			
Course number		Units		Prerequisite ⊠			
Title		Description	$\boxtimes$	Equivalent $\square$ Statement			
indicate add allows, drag expand. Plea	<b>WORDING/DESCRIPTION EDITS.</b> Indicate deleted or changed text using strike through, indicate added or new text using <u>underline</u> . If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under <u>Information about specific course components</u> if changing equivalent statement(s).						
Actuarial n derivatives binomial m model. Man Covers par <u>Casualty Ac</u> <del>Program o</del>	ACMA 340 - Financial Economics for Actuaries (3)  Actuarial models and their application to insurance and financial risks. Introductory derivatives. Options. Option strategies and risk management. Discrete-time models: binomial models, multi-period models. Continuous-time models: Black-Scholes-Merton model. Market-making, hedging, and option Greeks. Introduction to exotic options. Covers part of the syllabus for Exam IFM of the Society of Actuaries and Exam 3F of the Casualty Actuarial Society. This course is accredited under the University Accreditation Program of the Canadian Institute of Actuaries.  Prerequisite: ACMA 201 (or 210), and STAT 285, with a minimum grade of C. Corequisite: STAT 285.						
Fall, Spring,		YEAR FOR CHANGES year (please enter in					
derivatives binomial m model. Man Covers par Casualty Ad Program of Corequisite	c. Options. Optioned on the control of the syllab ctuarial Socies of the Ganadian of the Canadian of the Canad	tion strategies and riperiod models. Contined hedging, and option ous for Exam IFM of to ty. This course is accommoded and STAT (or 210), and STAT	isk manager inuous-time Greeks. Intr he Society o <del>redited und</del> es. <del>285,</del> with a	ment. Discrete-time models: models: Black-Scholes-Merton oduction to exotic options. of Actuaries and Exam 3F of the ler the University Accreditation			



Adding reference to CAS exam 3F since some of our students pursue actuarial designation under the CAS's education system, as opposed to the SOA's.

Accreditation under the CIA's University Accreditation Program, while expected to continue, is technically renewable annually so should not be in the calendar.

For the prerequisites:

ACMA 210 is changing to ACMA 201.

STAT 285 now covers less probability so it's not as critical to this course as it was before.



COURSE SU	ІВЈЕСТ	ACMA	NUMBER	440		Models for Financial conomics
TYPE OF CH	<b>ANGES.</b> Pl	ease type 'X'	for the app	ropriate rev	ision(s):	
Course number		Uni	its		Prerequ	uisite 🗵
Title		Des	scription		Equiva Stater	
indicate add allows, drag	ed or new the endpo se review	text using <u>ur</u> int of the tex the "Equival	nderline. If y It box to ma ency statem	you need to e ke it bigger, a lents" section	enter more to as it will not n under <u>Info</u>	ing strike through, ext than the box automatically ormation about
Advanced a Introduction asset pricinn Carlo meth Covers para Casualty Advanced	actuarial mon to stoching. Black-Sods. Advanto of the sylectuarial Softhe Canac	astic calculu choles-Mert nced option labus for Ex <u>ciety</u> . <del>This co lian Institute</del>	neir applica is: Ito's lemi on partial d pricing mod am IFM of ti ourse is acc e of Actuaric	tion to insura ma, risk neut ifferential ec lels. Implied he Society of <del>redited unde</del>	rality. Funda Juations. Exc volatility. Ac Actuaries <u>ar</u> Fr the Univer	ancial risks. amental theorems of otic options. Monte ctuarial applications. nd Exam 3F of the rsity Accreditation
<b>EFFECTIVE</b> Fall, Spring, S		_		textbox)		
Fall 2021						



Adding reference to CAS exam 3F since some of our students pursue actuarial designation under the CAS's education system, as opposed to the SOA's.

Accreditation under the CIA's University Accreditation Program, while expected to continue, is technically renewable annually so should not be in the calendar.

# For prerequisite:

With the proposed change from ACMA 320 to 301, we reviewed each course for which 320 was a prerequisite. In a number of cases ACMA 320 was a maturity prerequisite, not a content prerequisite—including ACMA 440. We determined this was no longer desirable. Having ACMA 320 (or the new ACMA 301) as a prerequisite may hinder some students' degree completion, now that ACMA 440 is proposed to be a required course for the actuarial science major.



the actuarial science major.

COURSE SU	JBJECT A	CMA NUMBER	455	TITLE Loss Models II
TYPE OF CH	( <b>ANGES.</b> Plea	se type 'X' for the ap	propriat	te revision(s):
Course number		Units		Prerequisite 🖂
Title		Description		Equivalent $\square$ Statement
ACMA 455 Aggregate coverages. syllabus fo University	loss models. Pricing and r Exam STAM Accreditatio	Credibility: models a reserving for short-te	nd estin erm insu tuaries. nadian Ir	nation. Insurance and reinsurance urance coverages. Covers part of the This course is accredited under the astitute of Actuaries.
Fall, Spring, S		(EAR FOR CHANGES year (please enter in		<b>x</b> )
320 was a	prerequisite.	In a number of cases	s ACMA	ve reviewed each course for which 320 was a maturity prerequisite, not e determined this was no longer

Accreditation under the CIA's University Accreditation Program, while expected to continue, is technically renewable annually so should not be in the calendar.

desirable. Having ACMA 320 (or the new ACMA 301) as a prerequisite may hinder some students' degree completion, now that ACMA 455 is proposed to be a required course for



YPE OF C	HANGES I	Please type 'X' for the ap	nronria	te revision(s):
ourse		Units	оргоргіа □	Prerequisite
umber		Offics		i rerequisite $\square$
Γitle		Description	$\boxtimes$	Equivalent $\square$ Statement
ndicate ad allows, dra expand. Ple epecific cou	ded or new g the endpe ease review arse compo	v text using <u>underline</u> . If oint of the text box to m	f you ne aake it bi ments" :	r changed text using strike through, ed to enter more text than the box gger, as it will not automatically section under Information about atement(s).
syllabus f <del>Universit</del> STAT 330	or Exam S' <del>y Accredita</del> ). Quantita	TAM of the Society of Acation Program of the Ca	ctuaries. <del>nadian I</del>	del selection. Covers part of the This course is accredited under the nstitute of Actuaries. Corequisite:
		and year (please enter i		x)
Fall 2021				
RATIONAL	E (must be	e included)		
				ion Program, while expected to ld not be in the calendar.



COURSE SU	ВЈЕСТ [	ACMA NU	MBER 360W	TITLE   Actuari	al Communicatio
TYPE OF CHA	<b>ANGES.</b> Pl	ease type 'X' for t	he appropriate	e revision(s):	
Course number		Units		Prerequisite	$\boxtimes$
Title		Descrip	tion 🗆	Equivalent Statement	
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		<b>D YEAR FOR CHA</b> nd year (please en			
Fall 2021					



ACMA 320 changing to ACMA 30	1.	



Page 1 of 2

COURSE SUE	ВЈЕСТ	ACMA	NUMBER	465	TITLE	Demog Models	raphy and Mortality
TYPE OF CHA	NGES.	Please type 'X'	for the app	oropria	te revision(s)	:	
Course number		Uni	ts		Pre	requisite	$\boxtimes$
Title		Des	scription			uivalent atement	
allows, drag the expand. Please specific course.  Prerequisite	e reviev e compo	v the "Equival	ency staten ging equiva	nents" s alent st	section under atement(s).		

EFFECTIVE TERM AND YEAR FOR CHANGES

Fall 2021

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



ACMA 320 changing to ACMA 30	1.	



COURSE SU	BJECT	ACMA	NUMBER	470	TITLE	Property Insuranc	and Casualty e	
TYPE OF CH	ANGES.	Please type	'X' for the app	propriate re	vision(s):			
Course number		Ī	Jnits		Prere	equisite		
Title		1	Description		_	iivalent tement		
indicate adde allows, drag t expand. Pleas specific cours	ed or nev the endp se reviev se compo	v text using oint of the v the "Equi onents if ch	Γ <b>S.</b> Indicate de g <u>underline</u> . If text box to ma valency stater nanging equiv naminimum gr	you need to ake it bigger nents" sectionalent statem	enter mor , as it will i on under <u>I</u>	e text than	the box atically	
_			<b>OR CHANGES</b> blease enter in					J
RATIONALE	(must be	included)						,
was a prere	quisite. I	n a numbe	n ACMA 320 to r of cases ACM g for ACMA 47	IA 320 was a	a maturity	prerequis		
Since only s	tudents a	admitted to	the actuarial	science maj	or are allo	wed to tak	e upper	

division ACMA courses, a prerequisite is not needed for this course.



COURSE SUI	ВЈЕСТ [	ACMA NUMBER	475	TITLE Theory of Pension
TYPE OF CHA	<b>NGES.</b> Pl	ease type 'X' for the ap	propria	nte revision(s):
Course number		Units		Prerequisite ⊠
Title		Description		Equivalent □ Statement
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		D YEAR FOR CHANGES and year (please enter ir		) (XX)
Fall 2021				



ACMA 320 changing to ACMA 301. ACMA 425 changing to ACMA 401.

Statement

COURSE SUBJECT ACMA NUMBER 425 TITLE Actuarial Mathematics II

# TYPE OF CHANGES. Please type 'X' for the appropriate revision(s): Course ⊠ Units □ Prerequisite ⊠ number Title ⊠ Description ⊠ Equivalent ⊠

**WORDING/DESCRIPTION EDITS.** Indicate deleted or changed text using strike through, indicate added or new text using <u>underline</u>. If you need to enter more text than the box allows, drag the endpoint of the text box to make it bigger, as it will not automatically expand. Please review the "Equivalency statements" section under <u>Information about specific course components</u> if changing equivalent statement(s).

# ACMA 425 401 - Long-Term Actuarial Mathematics II (3)

[requested short title: Long-Term Actuarial Math II]

Long-term insurance coverages. Advanced survival models estimation. Multiple state models. Advanced premium calculations and reserves. Profit testing. Pension plans and retirement benefits. Applications Computer applications for pricing, reserving and risk measurement of life insurance portfolios. Covers part of the syllabus for Exam LTAM of the Society of Actuaries. This course is accredited under the University Accreditation Program of the Canadian Institute of Actuaries. Prerequisite: ACMA 301 (or 320), with a minimum grade of C. Quantitative.

Students with credit for ACMA 425 cannot take ACMA 401 for further credit.

### EFFECTIVE TERM AND YEAR FOR CHANGES

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

Fall 2021
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# **RATIONALE** (must be included)

We are reorganizing the ACMA 320/425 sequence, with most of the material now fitting into 6 units (3+3) instead of 8 (5+3). The content in the new 301/401 sequence captures 85% of the content from the prior syllabi, allowing these courses to maintain their accreditation by the Canadian Institute of Actuaries while avoiding the burden of a 5-unit course for both students and faculty. The new split, which has ACMA 401 covering many of the same topics as 301 (survival models, premium calculations, reserves) but with more advanced features, allows for repetition of key concepts, and makes the first course in the sequence less demanding. The new course title and number signal the new direction. Accreditation under the CIA's University Accreditation Program, while expected to continue, is technically renewable annually so should not be in the calendar.