

OFFICE OF THE ASSOCIATE VICE-PRESIDENT, ACADEMIC

8888 University Drive,

TEL: 778.782.6654

avpacad@sfu.ca

Burnaby, BC Canada V5A 1S6 FAX: 778.782.5876

www.sfu.ca/vpacademic

MEMORANDUM -

FROM

ATTENTION Senate

Elizabeth Elle, Vice-Chair

Senate Committee on Undergraduate

Studies

RE: Course Changes DATE **PAGES**

September 16, 2022

Elmabet Elle

For information:

Acting under delegated authority at its meeting of September 15, 2022 SCUS approved the following curriculum revisions effective Summer 2023.

a. Faculty of Applied Sciences (SCUS 22-49a)

- 1. School of Sustainable Energy Engineering
 - (i) Equivalent statement changes for SEE 241

b. Faculty of Environment (SCUS 22-49b)

- 1. Department of Geography
 - (i) Prerequisite changes for GEOG 241 and 365

c. Faculty of Applied Sciences (SCUS 22-50a)

- 1. School of Sustainable Energy Engineering
 - (ii) Prerequisite change for SEE 325 and 464
- 2. School of Engineering Science
 - (i) Prerequisite change for ENSC 220

d. Faculty of Communication, Art and Technology (SCUS 22-50b)

- 1. School of Interactive Arts and Technology
 - (i) Equivalent statement changes for IAT 106

e. Faculty of Science (SCUS 22-50c)

- 1. Department of Mathematics
 - (i) Equivalent Statement change for FAN X99
 - (ii) Description change for MATH 302, 303 and 304 (Fall 2023)
 - (iii) Prerequisite changes for MATH 343, 345, 443,467 and 470 (Fall 2023)

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



TYPE OF CHANGES. Please type 'X' for the appropriate revision(s): Course	COURSE SUBJECT	SEE NUMBER	241	TITLE Measurement, Analys Forecasting	is and
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). An introduction to methods for collecting and analysing engineering data. Topics include engineering data representation, probability density functions, engineering measurements, error analysis, test of hypotheses, regression, and design of experiments. Prerequisite: PHYS 141, MATH 232. Corequisite: MATH 251. Students with credit for ENSC 280 and MSE 210, or STAT 270 may not take this course for further credit. EFFECTIVE TERM AND YEAR FOR CHANGES Fall, Spring, Summer and year (please enter in textbox)	TYPE OF CHANGES.	Please type 'X' for the ap	propriate revis	sion(s):	
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 introduction to methods for collecting and analysing engineering data. Topics include engineering data representation, probability density functions, engineering measurements, error analysis, test of hypotheses, regression, and design of experiments. Prerequisite: PHYS 141, MATH 232. Corequisite: MATH 251. Students with credit for ENSC 280 and MSE 210, or STAT 270 may not take this course for further credit. EFFECTIVE TERM AND YEAR FOR CHANGES Fall, Spring, Summer and year (please enter in textbox)		Units		Prerequisite \square	
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). An introduction to methods for collecting and analysing engineering data. Topics include engineering data representation, probability density functions, engineering measurements, error analysis, test of hypotheses, regression, and design of experiments. Prerequisite: PHYS 141, MATH 232. Corequisite: MATH 251. Students with credit for ENSC 280 and MSE 210, or STAT 270 may not take this course for further credit. EFFECTIVE TERM AND YEAR FOR CHANGES Fall, Spring, Summer and year (please enter in textbox)	Title \square	Description		•	
Fall, Spring, Summer and year (please enter in textbox)	allows, drag the endpexpand. Please reviews pecific course compound An introduction to include engineering measurements, error experiments. Prerewith credit for ENS	ooint of the text box to may the "Equivalency stater onents" if changing equivemethods for collecting arg data representation, proor analysis, test of hypothequisite: PHYS 141, MATH	ake it bigger, a ments" section alent statemen and analysing er obability densi heses, regressi I 232. Corequis	is it will not automatically under Information about int(s). Ingineering data. Topics ity functions, engineering ion, and design of site: MATH 251. Students	



SEE 241 has a lab component and is taught by a P.Eng. designated instructor, which is an important factor in the accreditation process.





COURSE SU	BJECT GEO	NUMBER	241	TITLE People, Place, Society					
TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):									
Course number		Units		Prerequisite ⊠					
Title		Description		Equivalent \square Statement					
indicate adde allows, drag expand. Pleas specific cours	ed or new text the endpoint o se review the ' se components	using <u>underline</u> . If y of the text box to mak	ou need to e se it bigger, a ents" sectior lent stateme						
		EAR FOR CHANGES ear (please enter in t	extbox)						
Summer 20)23								



Given that spatial concepts taught in GEOG 100 are reviewed at the beginning of the course, these additional introductory Sociology, Anthropology and Indigenous Studies courses would also be acceptable prerequisites.





COURSE SU	ВЈЕСТ	GEOG NUME	365	TITLE	Race, Re Space	esistance & Urban				
TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):										
Course number		Units		Prere	quisite					
Title		Description	on 🗆		ivalent tement					
indicate adde allows, drag t expand. Pleas specific cours	d or new he endpo se review se compon	text using <u>underline</u> int of the text box to the "Equivalency statements" if changing equest 45 units, including	e. If you need make it big atements" se uivalent sta	d to enter more ger, as it will nection under Internet(s).	e text tha ot autom	n the box atically				
	ummer a	D YEAR FOR CHAN nd year (please ente)						



Experience has shown that GEOG 100 is not necessary. Relevant conceptual material is provided in the course, that covers the ground that would be provided by GEOG 100.



COURSE SUI	ВЈЕСТ	SEE	NUMBER	325	TITLE		nical Design and Finite t Analysis
TYPE OF CHA	ANGES.	Please type 'X	" for the app	propriate revi	ision(s):		
Course number		Un	nits		Prere	quisite	
Title		De	scription		•	ivalent tement	
problems in Includes an problems. C	d or nev he endp e reviev e compo n and ap volving introdu oncepts	v text using <u>u</u> oint of the text v the "Equival onents if charal plication of F engineering rection to common relating to en	nderline. If yet box to ma lency statem nging equiva inite Elemen mechanics, hercial FEA	you need to e ke it bigger, a nents" section alent stateme nt Analysis (F neat transfer software and	enter mores it will renter mores it will renter it	e text that not auton nformation nergy systime elemented to proper the elemented to the text of the te	an the box natically on about tems design nents. ractical
EFFECTIVE T Fall, Spring, S	ummer	_					
Summer 20 RATIONALE		e included)					
The change SEE 325.	is sugge	ested by the c	ourse instru	ector. Topics	covered i	n SEE 22	2 is not relevant to



COURSE SU	ВЈЕСТ	SEE	NUMBER	464	TITLE	Energy Systems Modeling for Buildings					
TYPE OF CHANGES. Please type 'X' for the appropriate revision(s):											
Course number		Un	Units \square Prerequisite \boxtimes								
Title		De	Description Equivalent Statement								
indicate adde allows, drag t	d or nev he endp se reviev	w text using <u>u</u> oint of the tex v the "Equiva	<u>nderline</u> . If <u>y</u> xt box to ma lency staten	you need to ke it bigge nents" sect	o enter mor r, as it will r ion under <u>Ir</u>	using strike through, re text than the box not automatically nformation about					
mechanical standards to sustainabili innovative r 352, SEE 32	systems o define ty target nethods 4 and Sl	s, and their eff schedules for ts. Applying in s to enhance e	fects on ene the buildin ndustry stan energy use, a 10 and SEE	rgy use. Ūs gs, calculat idard softw and reach s 324. MSE s	ing the app te heating a vare to mod ustainabilit tudents wh	n the envelope and licable codes and nd cooling loads, and set el, and experiment with y targets. Prerequisite: SEE o completed MSE 321 can					
EFFECTIVE T Fall, Spring, S											
Summer 20 RATIONALE		e included)									
	r knowle	edge required	l for the cou	rse is cove	red in SEE 3	324 and SEE 352 is not a proper					





SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE SU	J BJECT E	NSC NUMBER	R 220	TITLE Electric Circuits I
TYPE OF CH	ANGES. Plea	ase type 'X' for the ap	propriate re	evision(s):
Course number		Units		Prerequisite 🗵
Title		Description		Equivalent \square Statement
allows, drag expand. Plea specific cour Prerequisi (MATH 260 MATH 260	the endpoingse review the secompone seco	t of the text box to me "Equivalency state nts if changing equivalency PHYS 126 or PHS 10), all with a minim	ake it bigger ments" sectivalent staten (YS 141), EN num grade of lents with cr	SC 120, MATH 232 and f C MATH 232 and/or redit for MSE 250 or SEE
_		YEAR FOR CHANGE I year (please enter i	_	
Summer 20			,	







MATH 232 is a pre-requisite for MATH 260.	



COURSE SU	IBJECT IA	T NUMBER	106	TITLE Spatial Thinking and Communicating
TYPE OF CH	ANGES. Pleas	se type 'X' for the app	oropriate i	revision(s):
Course number		Units		Prerequisite \square
Title		Description		Equivalent 🗵 Statement
indicate adde allows, drag expand. Plea specific cour Introduces focus on specific to understate technical behased model.	the endpoint se review the se component the world of patial thinking and, create, a ases of repreelling (Comp	t using <u>underline</u> . If yof the text box to mae "Equivalency statements if changing equivalents if changing equivalents are the founder the found use computer-generating 3D environments."	you need to ke it biggonents" secondent state entation an ational skip erated 3 Enents, technd physic	nd communication, with a ills and knowledge needed representations. Covers the nical sketching, computeral modelling. Students with
Fall, Spring, Summer 20 RATIONALE It was brou "Engineeri indicating members v	Summer and 023 (must be included in the cour at any Graphics at that IAT 106 who teach IAT	tention that the Scho and Software for Desi cannot be taken for f	ol of Susta gn" (SEE a urther cre the SEE 10	ninable Energy Engineering's 100) course has a statement edit. After discussion with the faculty 00 course materials it was determined



COURSE SU	ВЈЕСТ	FAN	NUMBER	X99	TITLE	Foundations of Analytical and Quantitative Reasoning			
TYPE OF CH	ANGES. I	Please type '〉	ζ' for the app	ropriate revi	ision(s):				
Course number		Ur	nits		Prere	equisite \square			
Title		De	escription		_	nivalent 🖂 ntement			
indicate adde allows, drag t expand. Pleas specific cours Students w MATH 150	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). Students who have taken, have received transfer credit for, or are currently taking MATH 150, 151, 154 or 157, or FAN X92 may not take FAN X99 for credit without the permission from the Department of Mathematics.								
	Summer and 23 (must be and FAN X	and year (ple	ease enter in	textbox) ar courses eff	fective Fa	all 2022. FAN X99			



UNDERGRADUATE STUDIES Page 1 of 1

cou	RSE SUBJI	ECT MATE	NUMBER	302	TITLE	Mathem	atical Journeys II ([3)
ТҮРЕ	OF CHAN	GES. Please t	ype 'X' for the ap	propriate re	evision(s):			
Cour			Units		Prere	quisite		
Title	9		Description		_	valent ement		
indica allows expan specif A fo mat qual part mat topi min	ate added of s, drag the add. Please recourse of cused explantitative anticularly to hematics. See the control of the control	endpoint of the endpoint of the endpoint of the endpoint of the endpoint of a state of the endpoint of a state of the endpoint	DITS. Indicate desing underline. If the text box to maderly stater if changing equivalency stater if changing equivalency stater if changing equivalency for division coureasoning. Each is minor students or repeat this coural 152 or 155 or 156 e may be additionated.	you need to ake it biggements" sectional alent stater ying from to rses and programmers country and others se for furth B, and MAT	o enter more r, as it will n ion under In ment(s). erm to term ovides furth ourse is desig with a broad er credit und H 232 or 240	e text than ot autom formation) that buil er challen gned to ap d interest der a diffe 0, all with	n the box atically n about lds on nges in ppeal t in erent	
Fall, S			R FOR CHANGES r (please enter in					
		ust be includ	ed)					
Show topi num cycl (eve	uld have b cs courses bering MA e) student en under a	een updated where stude ATH 301-304 s should not different nur	with MATH 301 - nts may repeat s only applies to t receive further co nber). Instances) and will be dea	ubject to a on the term of one certification of the certification of this should be shown as the certification of this should be shown as the certification of the certification	different top offering (fall peating the s ild be infrequ	ic. As the /spring o ame Jour uent (as t	sequence ver a 2-year neys topic	



COURSE SUBJI	ECT MA	NUMBER	303	TITLE	Mathematical Journeys III (
TYPE OF CHAN	GES. Pleas	e type 'X' for the app	ropriate revi	ision(s):	
Course number		Units		Prere	equisite 🗌
Title		Description		_	uivalent 🗆 itement
allows, drag the expand. Please respecific course of the specific co	endpoint of eview the component oration of ideas from and deducti mathema: Students mathema: MATH 152 ere may b	or <u>155</u> or <u>158</u> , and <u>l</u> e additional prerequ	ke it bigger, an ents" sectionalent statemed in statemed in section term from term fro	n under In under In under In ent(s). m to term rides furtherse is destith a broader eredit ur	not automatically nformation about n) that builds on her challenges in igned to appeal ad interest in nder a different topic. with a minimum
		EAR FOR CHANGES year (please enter in			
Fall 2023					
RATIONALE (m	ust be incl	uded)			
topics courses numbering MA cycle) students (even under a	where stu ATH 301-3 s should no different r	idents may repeat su 04 only applies to th ot receive further cr	abject to a diffice term of office dit for repeated this should	ferent to ering (fal ating the be infrec	ys I. These are special pic. As the sequence ll/spring over a 2-year same Journeys topic quent (as topics usually do structor.



SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE SU	вјест 🛚	MATH NUM	BER 304	TITLE	Mathematical J	ourneys IV (3
TYPE OF CHA	ANGES. Ple	ease type 'X' for th	e appropriate	e revision(s):		
Course number		Units		Prerec	quisite 🗌	
Title		Descripti	on 🗵	_	valent \square ement	
A focused emathematic quantitative particularly mathematic Prerequisite	e review to the component of the compone	of the text box the "Equivalency stents if changing end of a special topic om lower division of a special topic om lower division of a special topic om lower division of a special topic of the spec	tatements" sequivalent star (varying from courses and ach Journeys ents and othe course for fur and MATH 2:	ection under Interment(s). In term to term) provides further course is designs with a broad ther credit und ther credit und the course is designs with a broad ther credit und the course is designs with a broad the credit und the	that builds on er challenges in gned to appeal d interest in der a different to yith a minimum	opic.
		YEAR FOR CHAN d year (please ent)		
Fall 2023						
RATIONALE	(must be i	ncluded)				
topics cours numbering cycle) stude (even unde	ses where a MATH 301 ents should r a differer	ated with MATH 3 students may repe 1-304 only applies I not receive furth nt number). Instan cycle) and will be	eat subject to to the term o er credit for i ces of this sh	a different top of offering (fall, repeating the so ould be infrequ	ic. As the sequents /spring over a 2 ame Journeys to lent (as topics u	nce -year opic



JBJECT	MATH NUMBI	ER 343	TITLE	Applied (3)	Discrete Mathematics
ANGES. P	ease type 'X' for the a	ppropriate	revision(s):		
	Units		Prere	quisite	\boxtimes
	Description	n 🗆	_		
ed or new the endpoint is ereview the endpoint is expected and algorithms, see the bound, he grade of at	cext using <u>underline</u> . Int of the text box to reche "Equivalency statements if changing equents, generating elements, generating elements, generating elements, catalan feuristic search algorithms.	If you need make it bigg ements" se ivalent stat mentary confamilies), be ithms. Prer	to enter more ger, as it will notion under Ir ement(s). mbinatorial obacktracking al equisite: MAC	e text that auton aformation of piects, congorithms CM 201 (an the box natically on about ounting s, with a
E (must be	ncluded)				
udents in -	the majority being	students w	ho took MACN	/I 201 in	their first-year
	DESCRIPT ed or new to the endpoint and algoritations, seed bound, he grade of attree. TERMANISUMMER are are are all grade required to the endpoint and algoritations, seed bound, he grade of attree.	DESCRIPTION EDITS. Indicate ed or new text using underline. the endpoint of the text box to rese review the "Equivalency states components if changing equand algorithms, generating elementations, set partitions, Catalan for the descriptions, Catalan for the descriptions of the text box to reservice the "Equivalency states components" if changing equand algorithms, generating elementations, set partitions, Catalan for the descriptions of the text box to reservice the majorithms of the text box to reservice the endpoint of the endpoint of the text box to reservice the endpoint of the text box to reservice the endpoint of the	DESCRIPTION EDITS. Indicate deleted or ed or new text using underline. If you need the endpoint of the text box to make it bigg is ereview the "Equivalency statements" see components if changing equivalent statements and algorithms, generating elementary contritions, set partitions, Catalan families), but bound, heuristic search algorithms. Prerigrade of at least B- C-). Recommended: known. TERMAND YEAR FOR CHANGES Summer and year (please enter in textbox) E (must be included) grade requirement no longer of importance undents in the majority being students were	ANGES. Please type 'X' for the appropriate revision(s): Units Prere Description Equ Sta DESCRIPTION EDITS. Indicate deleted or changed text or the endpoint of the text box to make it bigger, as it will represent the endpoint of the text box to make it bigger, as it will represent the "Equivalency statements" section under Interese components if changing equivalent statement(s). and algorithms, generating elementary combinatorial of artitions, set partitions, Catalan families), backtracking all bound, heuristic search algorithms. Prerequisite: MAG grade of at least B- C-). Recommended: knowledge of a precent combinatorial of the	ANGES. Please type 'X' for the appropriate revision(s): Units Prerequisite Description Equivalent Statement DESCRIPTION EDITS. Indicate deleted or changed text using streed or new text using underline. If you need to enter more text that the endpoint of the text box to make it bigger, as it will not auton use review the "Equivalency statements" section under Informatics components if changing equivalent statement(s). and algorithms, generating elementary combinatorial objects, contitions, set partitions, Catalan families), backtracking algorithms bound, heuristic search algorithms. Prerequisite: MACM 201 (grade of at least B- C-). Recommended: knowledge of a program re. TERMAND YEAR FOR CHANGES Summer and year (please enter in textbox)





COURSE SU	BJECT MA	NUMBER NUMBER	345	TITLE	Introduction (3)	on to Graph The
TYPE OF CH	ANGES. Pleas	e type 'X' for the ap	propriate	e revision(s):		
Course number		Units		Prere	equisite 🗵	
Title		Description		_	iivalent [tement]
indicate adde allows, drag t expand. Pleas specific cours Fundament and paths, i	ed or new text the endpoint of se review the se component	N EDITS. Indicate detusing underline. If of the text box to ma "Equivalency stater is if changing equivarees and distances, s, integral flows. Preative.	you need ake it big ments" se valent sta matching	I to enter mor ger, as it will rection under Ir tement(s).	e text than to the text than to the text than to the text that the text	the box ically about
Fall, Spring, S Fall 2023 RATIONALE Minimum g waiving stu	(must be included) grade required dents in the	EAR FOR CHANGES year (please enter in duded) ment no longer of in ne majority being st greater interest in	n textbox	e. Recent inst	M 201 in the	ir first-year





SENATE COMMITTEE ON UNDERGRADUATE STUDIES

			-	
TYPE OF CH	ANGES. Ple	ase type 'X' for the app	ropriate	revision(s):
Course number		Units		Prerequisite ⊠
Title		Description		Equivalent □ Statement
Design the squares, fir Polya coun and MACM and either	se compone ory: Steiner nite geomet ting. Prerec 201 with a MATH 343 L. Quantitati	triple systems, balanceries. Enumeration: genulusite: MATH 340 or 3 grade of at least B Mount of the minimum grade	ed incomerating for the state of the state o	ement(s). aplete block designs, latin unctions. Burnside's Lemma, a minimum grade of C- b, with a minimum grade of C- MACM 201 with a minimum
FFFFCTIVE '		YEAR FOR CHANGES		
_		YEAR FOR CHANGES d year (please enter in	textbox)	
_			textbox)	
Fall, Spring, S	Summer and	d year (please enter in	textbox)	





SENATE COMMITTEE ON UNDERGRADUATE STUDIES

COURSE SU	BJECI	MATH	NUMBER	467	TITLE D	ynamio	cal Systems (3)
TYPE OF CHA	ANGES. P	lease type 'X	or the ap	propriat	e revision(s):		
Course number		Un	its		Prerequ	iisite	\boxtimes
Title		De	scription		Equiva Staten		
allows, drag to expand. Please specific course. Stability an application systems, inconservative bifurcation with a mini system. EFFECTIVE To Fall, Spring, Section 1985.	the endpose review se composed bifurcas. The stucked bifurcas such that is the system and an in mum gra	the "Equivalents" if chartion in continuty of the loc quilibria and s, limit cycle troduction t de of C Qua	ext box to make the property of the property o	ake it big ments" so ralent sta discrete o al behav rbits, pha care-Ben erequisi	lynamical system our of linear and use plane analysis dixson theorem, F ee: MATH 260 or	automarmation ns, with l nonlings, Hopf	atically n about hear
Fall 2023							
RATIONALE							
		oly renumber ave since tak			· Fall 2020. Prere	equisite	updated to



COURSE SUBJ	ECT MATE	H NUMBER	470	TITLE Variational Calculus (3	3)		
TYPE OF CHAN	GES. Please t	ype 'X' for the app	oropriate rev	ision(s):			
Course number		Units		Prerequisite 🗵			
Title		Description		Equivalent \square Statement			
indicate added allows, drag the expand. Please	or new text us endpoint of review the "E	sing <u>underline</u> . If the text box to ma	you need to e lke it bigger, a nents" section	nged text using strike through, enter more text than the box as it will not automatically n under Information about ent(s).			
values of integ Poisson brack 314, 320, 322	grals. Canonic ets. Prerequi PHYS 384, al usite is both	cal equations of m site: (MATH 260 of all with a minimun of MATH 254 and	otion, phase or MATH 310 or grade of C	problems, stationary space, Lagrangian and and and one of MATH An alternative to the or MATH 310), both with			
EFFECTIVE TERM AND YEAR FOR CHANGES Fall, Spring, Summer and year (please enter in textbox)							
Fall 2023							





MATH 310 was simply renumbered to MATH 260 for Fall 2020. Prerequisite updated to include those who have since taken MATH 260.