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MEMORANDUM

ATTENTION Senate **DATE** March 13, 2024
FROM Mary O'Brien,
Chair of Senate Graduate Studies
Committee (SGSC)
RE: Course Deletion

**For information:**

Acting under delegated authority at its meeting of March 4, 2024, SGSC approved the following course deletion, effective **Fall 2025**:

Faculty of ScienceDepartment of Statistics and Actuarial Science

- 1) Course Deletions: ACMA 830
Course Deletions: ACMA 831

MEMO

**Faculty of
Science**

ATTENTION: Senate Graduate Studies Committee

FROM: Vance Williams, Associate Dean Graduate Studies, Faculty of Science

RE: Proposed Course Additions Fall 2025, Faculty of Science

DATE: February 4, 2025

Dear SGSC,

The following curriculum changes have been approved by the Faculty of Science and are being submitted to the Senate Graduate Studies committee for approval.

~~The following program changes are being proposed:~~
Actuarial Science MSc

~~The following new courses are being proposed:~~
CHEM 802, RISK 801, RISK 802, RISK 803, MBB 748

~~The following course changes are being proposed:~~
ACMA 832, ACMA 850

The following course deletions are being proposed:
ACMA 830, ACMA 831

Enclosed are the documents in support of these changes.

Sincerely



Vance Williams
Associate Dean Graduate Studies, Faculty of Science

MEMORANDUM

TO: Dr. Vance Williams, Chair, Faculty of Science GSC

FROM: Barbara Sanders, Actuarial Science Group Leader
Department of Statistics and Actuarial Science

DATE: February 20, 2025

SUBJECT: Changes to MSc in Actuarial Science

The Department of Statistics and Actuarial Science is proposing changes to the Master of Science program in actuarial science. These include:

1. ~~Changing the subject “Actuarial Mathematics” to “Actuarial and Risk Sciences”, and creating the abbreviation RISK for courses in this subject.~~
2. ~~Creating three new 3-unit courses: RISK 801, 802 and 803, to be cross-listed with undergraduate courses (RISK 441, 412, and 421, respectively).~~
3. ~~Modifying the course number and units of ACMA 832 (currently four units) to RISK 804 (three units) and adjusting the calendar description.~~
4. ~~Modifying the course label of ACMA 850 to RISK 850~~
5. ~~Modifying the MSc program requirements to:~~
 - a. ~~replace ACMA 830, 831, and 832 (total of 12 units) with RISK 801, 802, 803, and 804 (still a total of 12 units);~~
 - b. ~~move STAT 830 from the list of required courses to the list of electives;~~
 - c. ~~fix the minimum graduate course requirements to align with the recent change of STAT 848 MSc Project from 6 units to 10 units, and~~
 - d. ~~change all references in the body of the program description from ACMA to RISK.~~
6. Deleting ACMA 830 and 831.

The rationale for the first change is given on the next page.

The actuarial profession has evolved significantly since the turn of the millennium. While our core mission—quantifying and managing risk—remains unchanged, advancements in technology and methodology have expanded both the breadth and depth of the problems we tackle. In fact, modern actuarial skills are essential for understanding and managing the financial impact of emerging risks such as cyber threats and climate change.

At the same time, the rise of data science has intensified competition for the analytical talent that has traditionally pursued actuarial careers. To stay relevant and attract the next generation, we must present our field as dynamic, accessible, and forward-looking—something major actuarial organizations already emphasize.

Our current subject label, “**Actuarial Mathematics**” (ACMA) fails to reflect the breadth and modern relevance of our field. We propose renaming it “**Actuarial and Risk Sciences**” to better capture our evolving discipline. Similarly, our proposed new abbreviation **RISK** is clearer and more engaging while succinctly conveying the central focus of our field. Indeed, the word “risk” is closely associated with actuarial science in an academic context, featured in the titles of key journals (e.g., *Journal of Risk and Insurance, Risks, Geneva Papers on Risk and Insurance*) and in the name of many prominent schools/departments where actuarial science is taught (e.g., the Maurice R. Greenberg School of Risk Science at Georgia State University, the Department of Risk and Insurance at the University of Wisconsin-Madison, etc.)

Note that the proposed change does not affect the names of our existing programs (BSc Major/Honours and MSc in Actuarial Science). Rather, it creates a foundation for future growth, allowing us to introduce new courses and programs in emerging areas without fragmentation.

The rationale for the remaining changes is described in the enclosed documents. Importantly, 85% of the existing graduate content is retained and simply redistributed among the new courses. The rest of the content (~15%) is replaced with more relevant, modern topics (e.g., regression-based claims modelling and stochastic valuation of modern life insurance portfolios). These changes benefit our students and allow us to maintain this MSc program by realizing some teaching efficiencies.

All changes have been approved by the department's Graduate Studies Committee.

GRADUATE COURSE DELETION

A course can be deleted if it has not been offered in the previous seven years or if there is no chance of it being offered again. Once a course has been deleted for a minimum of 10 years, the course subject and number can be re-used.

Course Subject / Number	ACMA 830	Units	4
Course Title			
Stochastic Processes for Insurance and Finance			
Reason for Deletion			
We are reorganizing the content of the actuarial graduate courses to better serve students and to increase teaching efficiencies. Some of the content of ACMA 830 will be retained in the new 3-unit RISK 801 (cross-listed with RISK 441). ACMA 830 will no longer be offered.			
Effective Term and Year: Fall 2025			

Before Submission to SGSC check the following:

Is this course required for degree completion?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Do any program calendar entries need to be changed as a result of this withdrawal?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Does the departmental website need to be updated?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO

Additional information for any YES responses:

Program requirements in calendar/on website are being updated, replacing ACMA 830 with RISK 801. Existing MSc students already completed RISK 830.

REMINDER: All course deletions must be identified on a cover memo and confirmed as approved when submitted to FGSC and SGSC.

► CONTACT PERSON

Department / School / Program	Contact name	Contact email
Statistics and Actuarial Science	Barbara Sanders	bsanders@sfu.ca

► DEPARTMENTAL APPROVAL

Department Graduate Program Committee Brad McNeney	Signature  <small>Digitally signed by W Bradley McNeney Date: 2025.01.05 14:26:23 -08'00'</small>	Date Jan. 6, 2025
Department Chair Derek Bingham	Signature  <small>Digitally signed by Derek Bingham Date: 2025.01.06 09:58:09 -08'00'</small>	Date Jan 6, 2025

► FACULTY APPROVAL

Faculty Graduate Studies Committee (FGSC) Vance Williams	Signature  <small>Digitally signed by Vance Williams Date: 2025.01.24 09:23:45 -08'00'</small>	Date January 24, 2025
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► SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee (SGSC) Mary O'Brien	Signature 	Date March 14, 2025
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GRADUATE COURSE DELETION

A course can be deleted if it has not been offered in the previous seven years or if there is no chance of it being offered again. Once a course has been deleted for a minimum of 10 years, the course subject and number can be re-used.

Course Subject / Number ACMA 831	Units 4
Course Title Advanced Actuarial Models	
Reason for Deletion	
We are reorganizing the content of the actuarial graduate courses to better serve students and to increase teaching efficiencies. Some of the content of ACMA 831 will be in the new 3-unit RISK 802 (cross-listed with RISK 412), and some in the new 3-unit RISK 803 (cross-listed with RISK 421). ACMA 831 will not be offered any more.	
Effective Term and Year: Fall 2025	

Before Submission to SGSC check the following:

Is this course required for degree completion?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Do any program calendar entries need to be changed as a result of this withdrawal?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Does the departmental website need to be updated?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO

Additional information for any YES responses:

Program reqts in calendar/on website are being updated, replacing ACMA 831 with RISK 802 & 803. Existing MSc students are taking 831 in Spring '25.

REMINDER: All course deletions must be identified on a cover memo and confirmed as approved when submitted to FGSC and SGSC.

► CONTACT PERSON

Department / School / Program Statistics and Actuarial Science	Contact name Barbara Sanders	Contact email bsanders@sfu.ca
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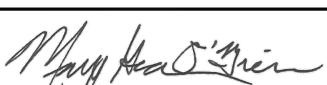
► DEPARTMENTAL APPROVAL

Department Graduate Program Committee Brad McNeney	Signature  <small>Digitally signed by W Bradley McNeney Date: 2025.01.05 14:26:40 -08'00'</small>	Date Jan. 6, 2025
Department Chair Derek Bingham	Signature  <small>Digitally signed by Derek Bingham Date: 2025.01.06 09:58:24 -08'00'</small>	Date Jan 6, 2025

► FACULTY APPROVAL

Faculty Graduate Studies Committee (FGSC) Vance Williams	Signature  <small>Digitally signed by Vance Williams Date: 2025.01.24 09:25:14 -08'00'</small>	Date January 24, 2025
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► SENATE GRADUATE STUDIES COMMITTEE APPROVAL

Senate Graduate Studies Committee (SGSC) Mary O'Brien	Signature 	Date March 14, 2025
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