



MEMO
Faculty of Science

ATTENTION Wade Parkhouse, Dean, Graduate Studies

FROM Peter Ruben, Associate Dean, Faculty of Science

RE Minor course changes – Earth Science

DATE May 13, 2014

TIME 9:59 AM

The graduate program in the Department of Earth Sciences seeks to remove the departmental seminar, EASC 900, as a requirement for their PhD students.

The Department also seeks to make minor course changes, including a change in prerequisite to EASC 607, and changes in the course description for EASC 604, 617, 620, and 624.

The Faculty Graduate Program Committee reviewed and approved the proposed changes. The proposed changes have my approval.



P. Ruben



Department of Earth Sciences

To: Peter Ruben, Associate Dean / Science
From: Andrew Calvert
Chair, Earth Sciences Graduate Studies Committee
Re: Graduate program and course changes
Date: 28th April 2014

I would be grateful if you would consider the following changes to the Earth Sciences Graduate program, which were recently approved by the department.

- 1) Removal of first departmental seminar (EASC 900) for PhD students
The growth in the number of PhD students in our program has resulted in an excessive number of graduate student seminars. Students will still be required to present the results of their PhD research (EASC 901) to the department. The proposed change in wording to be included in the Calendar description of the PhD program is attached.

EASC 900 PhD Seminar – To be deleted

- 2) Minor Graduate Course Changes
EASC 604 Deformation Mechanisms and Continental Tectonics – Change to course description
EASC 607 Exploration Seismology – Change to prerequisite
EASC 617 Quaternary Geology – Change to course description
EASC 620 Volcanology – Change to course description
EASC 624 Geology of the Canadian Cordillera – Change to course description

Yours sincerely,

Andrew J. Calvert

Proposed Change to EASC PhD Program in Calendar

FROM	TO
<p data-bbox="230 470 669 512">Program Requirements</p> <p data-bbox="230 576 407 608">Course Work</p> <p data-bbox="230 668 509 700">Students complete all of</p> <p data-bbox="230 755 781 787">EASC 600 - Introduction to Graduate Studies (0)</p> <p data-bbox="230 804 667 836">EASC 900 - PhD Research Seminar (1)</p> <p data-bbox="230 853 667 885">EASC 901 - PhD Research Seminar (1)</p> <p data-bbox="230 902 532 934">EASC 998 - PhD Thesis (6)</p> <p data-bbox="230 989 812 1555">In addition, those who entered the program with a BSc degree only are required to complete an additional 15 units in graduate courses, whereas for those who entered with a master's degree, an additional six units of graduate courses are required. With the graduate chair's approval, students may substitute related graduate courses from other departments/programs including physical geography, chemistry, physics, biological sciences, and the resource and environmental management. No more than six units from 700 division EASC courses will be permitted.</p> <p data-bbox="230 1610 812 1836">With advance approval, students may complete up to one half of the above course requirements at another university. Additional course work may be assigned by the supervisory committee, based on the results of the oral candidacy examination.</p>	<p data-bbox="850 470 1289 512">Program Requirements</p> <p data-bbox="850 576 1027 608">Course Work</p> <p data-bbox="850 668 1130 700">Students complete all of</p> <p data-bbox="850 755 1401 787">EASC 600 - Introduction to Graduate Studies (0)</p> <p data-bbox="850 804 1287 836">EASC 901 - PhD Research Seminar (1)</p> <p data-bbox="850 853 1154 885">EASC 998 - PhD Thesis (6)</p> <p data-bbox="850 940 1412 1555">In addition, those who entered the program with a BSc degree only are required to complete an additional 15 units in graduate courses, whereas for those who entered with a master's degree, an additional six units of graduate courses are required. With the graduate chair's approval, students may substitute related graduate courses from other departments/programs including physical geography, chemistry, physics, biological sciences, and the resource and environmental management. No more than six units from 700 division EASC courses will be permitted.</p> <p data-bbox="850 1610 1401 1885">With advance approval, students may complete up to one half of the above course requirements at another university. Additional course work may be assigned by the supervisory committee, based on the results of the oral candidacy examination.</p>

<p>Research Seminars</p> <p>In addition to normal course work, students will also present two research seminars by completing</p> <p>EASC 900 – PhD Research Seminar (1) EASC 901 - PhD Research Seminar (1)</p> <p>At least one research seminar should be based on completed, or nearly completed, thesis work. One seminar may address any earth sciences topic approved by the supervisory committee.</p> <p>Students are expected to attend all the research seminars in the department.</p>	<p>Research Seminars</p> <p>In addition to normal course work, <u>PhD students must give one research seminar, which should be based on completed, or nearly completed, thesis work:</u></p> <p>EASC 901 - PhD Research Seminar (1)</p> <p>Students are expected to attend all the research seminars in the department.</p>
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Graduate Course Minor Change Form

This form is for an SFU department or program to request a minor change to an existing graduate course. After approval and signature by the faculty graduate studies committee, this form should be forwarded to the Dean of Graduate Studies for approval by the Senate Graduate Studies Committee (SGSC). SGSC will forward the approval to Senate for information.

DEPARTMENT

Department / School / Program Earth Sciences	Contact name Dan Gibson	Contact email hdgibson@sfu.ca
Please revise the following elements of the indicated graduate course: <input type="checkbox"/> Catalogue number <input type="checkbox"/> Units <input type="checkbox"/> Title <input checked="" type="checkbox"/> Description <input type="checkbox"/> Other: _____		

CURRENT COURSE

Please complete only the fields to be changed.

Program (eg. LBST) EASC	Number (eg. 810) 604	Units (eg. 4)
Course title (max 80 characters) Deformation Mechanisms and Continental Tectonics		
Short title (appears on transcripts, max 25 characters)		
Course description for SFU Calendar <input type="checkbox"/> see attached This course will focus on increasing the level of understanding of the mechanisms by which rocks deform and the effect of environmental variables (effective pressure, temperature, strain rate, chemical environment, etc.) on these deformation mechanisms. Lectures will cover flow concepts applied to ductile deformation, grain-scale to crustal-scale strain partitioning, and models of exhumation of metamorphic rocks. The link between far-field effects such as lithosphere rheology, climate and erosion, and orogenic style will also be discussed.		
Available course components <input type="checkbox"/> Lecture <input type="checkbox"/> Seminar <input type="checkbox"/> Laboratory <input type="checkbox"/> Practicum <input type="checkbox"/> Online <input type="checkbox"/> _____		
Practicum work done in this class will involve children or vulnerable adults (If the "Yes" box is checked, all students and instructors will require criminal record checks) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Grading basis <input type="checkbox"/> Graded <input type="checkbox"/> Satisfactory / Unsatisfactory <input type="checkbox"/> In Progress / Complete <input type="checkbox"/> _____		
Prerequisites (if any)		
This is combined with an undergrad course. <input type="checkbox"/> Yes <input type="checkbox"/> No		
Course number and units: _____		
Additional course requirements for graduate students		

REVISED COURSE

Please complete only the fields to be changed.

Program (eg. LBST)	Number (eg. 810)	Units (eg. 4)
Course title (max 80 characters)		
Short title (appears on transcripts, max 25 characters)		
Course description for SFU Calendar <input type="checkbox"/> see attached his course will focus on increasing the level of understanding of the mechanisms by which rocks deform and the effect of environmental variables (effective pressure, temperature, strain rate, chemical environment, etc.) on these deformation mechanisms. Lectures will cover flow concepts applied to ductile deformation, grain-scale to crustal-scale strain partitioning, and models of exhumation of metamorphic rocks. The link between far-field effects such as lithosphere rheology, climate and erosion, and orogenic style will also be discussed. There will also be a 2-day field trip associated with this class.		
Available course components <input type="checkbox"/> Lecture <input type="checkbox"/> Seminar <input type="checkbox"/> Laboratory <input type="checkbox"/> Practicum <input type="checkbox"/> Online <input type="checkbox"/> _____		
Practicum work done in this class will involve children or vulnerable adults (If the "Yes" box is checked, all students and instructors will require criminal record checks) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Grading basis <input type="checkbox"/> Graded <input type="checkbox"/> Satisfactory / Unsatisfactory <input type="checkbox"/> In Progress / Complete <input type="checkbox"/> _____		
Prerequisites (if any)		
This is combined with an undergrad course. <input type="checkbox"/> Yes <input type="checkbox"/> No		
Course number and units: _____		
Additional course requirements for graduate students		

APPROVALS

Faculty graduate studies committee name

Signature

Date

Senate graduate studies committee name

Signature

Date

[Handwritten Signature]

[Handwritten Signature]

13 May 14

June 16/14



Graduate Course Minor Change Form

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DEPARTMENT

Department / School / Program EASC	Contact name A.J. Calvert	Contact email acalvert@sfu.ca
Please revise the following elements of the indicated graduate course: <input type="checkbox"/> Catalogue number <input type="checkbox"/> Units <input type="checkbox"/> Title <input type="checkbox"/> Description <input checked="" type="checkbox"/> Other: <u>Prerequisite</u>		

CURRENT COURSE

Please complete only the fields to be changed.

Program (eg. LBST) EASC	Number (eg. 810) 607	Units (eg. 4) 3
Course title (max 80 characters) Exploration seismology		
Short title (appears on transcripts, max 25 characters)		
Course description for SFU Calendar <input type="checkbox"/> see attached		
Available course components <input type="checkbox"/> Lecture <input type="checkbox"/> Seminar <input type="checkbox"/> Laboratory <input type="checkbox"/> Practicum <input type="checkbox"/> Online <input type="checkbox"/> _____		
Practicum work done in this class will involve children or vulnerable adults (If the "Yes" box is checked, all students and instructors will require criminal record checks) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Grading basis <input type="checkbox"/> Graded <input type="checkbox"/> Satisfactory / Unsatisfactory <input type="checkbox"/> In Progress / Complete <input type="checkbox"/> _____		
Prerequisites (if any) EASC 417 or equivalent		
This is combined with an undergrad course. <input type="checkbox"/> Yes <input type="checkbox"/> No		
Course number and units: _____		
Additional course requirements for graduate students		

REVISED COURSE

Please complete only the fields to be changed.

Program (eg. LBST)	Number (eg. 810)	Units (eg. 4)
Course title (max 80 characters)		
Short title (appears on transcripts, max 25 characters)		
Course description for SFU Calendar <input type="checkbox"/> see attached		
Available course components <input type="checkbox"/> Lecture <input type="checkbox"/> Seminar <input type="checkbox"/> Laboratory <input type="checkbox"/> Practicum <input type="checkbox"/> Online <input type="checkbox"/> _____		
Practicum work done in this class will involve children or vulnerable adults (If the "Yes" box is checked, all students and instructors will require criminal record checks) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Grading basis <input type="checkbox"/> Graded <input type="checkbox"/> Satisfactory / Unsatisfactory <input type="checkbox"/> In Progress / Complete <input type="checkbox"/> _____		
Prerequisites (if any) Permission of instructor		
This is combined with an undergrad course. <input type="checkbox"/> Yes <input type="checkbox"/> No		
Course number and units: _____		
Additional course requirements for graduate students		

APPROVALS

Peter Rubin
Faculty graduate studies committee name

[Signature]
Signature

13 May 14
Date

Senate graduate studies committee name

[Signature]
Signature

June 16/14
Date



Graduate Course Minor Change Form

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DEPARTMENT

Department / School / Program Earth Sciences	Contact name Brent Ward	Contact email bcward@sfu.ca
Please revise the following elements of the indicated graduate course: <input type="checkbox"/> Catalogue number <input type="checkbox"/> Units <input type="checkbox"/> Title <input checked="" type="checkbox"/> Description <input type="checkbox"/> Other: _____		

CURRENT COURSE

Please complete only the fields to be changed.

Program (eg. LBST) EASC	Number (eg. 810) 617	Units (eg. 4) 3
Course title (max 80 characters) Quaternary Geology		
Short title (appears on transcripts, max 25 characters)		
Course description for SFU Calendar <input type="checkbox"/> see attached Environments of glacial and proglacial deposits. Quaternary stratigraphy and dating methods with emphasis on the Cordillera.		
Available course components <input type="checkbox"/> Lecture <input type="checkbox"/> Seminar <input type="checkbox"/> Laboratory <input type="checkbox"/> Practicum <input type="checkbox"/> Online <input type="checkbox"/> _____		
Practicum work done in this class will involve children or vulnerable adults (If the "Yes" box is checked, all students and instructors will require criminal record checks) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Grading basis <input type="checkbox"/> Graded <input type="checkbox"/> Satisfactory / Unsatisfactory <input type="checkbox"/> In Progress / Complete <input type="checkbox"/> _____		
Prerequisites (if any)		
This is combined with an undergrad course. <input type="checkbox"/> Yes <input type="checkbox"/> No		
Course number and units: _____		
Additional course requirements for graduate students		

REVISED COURSE

Please complete only the fields to be changed.

Program (eg. LBST)	Number (eg. 810)	Units (eg. 4)
Course title (max 80 characters)		
Short title (appears on transcripts, max 25 characters)		
Course description for SFU Calendar <input type="checkbox"/> see attached Environments of glacial and proglacial deposits. Quaternary stratigraphy and dating methods with emphasis on the Cordillera. The course includes several 1-day trips and at least one 3-day trip.		
Available course components <input type="checkbox"/> Lecture <input type="checkbox"/> Seminar <input type="checkbox"/> Laboratory <input type="checkbox"/> Practicum <input type="checkbox"/> Online <input type="checkbox"/> _____		
Practicum work done in this class will involve children or vulnerable adults (If the "Yes" box is checked, all students and instructors will require criminal record checks) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Grading basis <input type="checkbox"/> Graded <input type="checkbox"/> Satisfactory / Unsatisfactory <input type="checkbox"/> In Progress / Complete <input type="checkbox"/> _____		
Prerequisites (if any)		
This is combined with an undergrad course. <input type="checkbox"/> Yes <input type="checkbox"/> No		
Course number and units: _____		
Additional course requirements for graduate students		

APPROVALS

Peter Kuban
Faculty graduate studies committee name

Senate graduate studies committee name

[Signature]
Signature

[Signature]
Signature

13 March
Date

June 16/14
Date

Graduate Course Minor Change Form

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DEPARTMENT

Department / School / Program Earth Sciences	Contact name Glyn Williams-Jones	Contact email glynwj@sfu.ca
Please revise the following elements of the indicated graduate course: <input type="checkbox"/> Catalogue number <input type="checkbox"/> Units <input type="checkbox"/> Title <input checked="" type="checkbox"/> Description <input type="checkbox"/> Other: _____		

CURRENT COURSE

Please complete only the fields to be changed.

Program (eg. LBST) EASC	Number (eg. 810) 620	Units (eg. 4) 3
Course title (max 80 characters) Volcanology		
Short title (appears on transcripts, max 25 characters)		
Course description for SFU Calendar <input type="checkbox"/> see attached Physical, chemical and tectonic aspects of volcanology examined with emphasis on processes of magma generation and evolution, styles of eruption, environments of deposition, and interpretation of volcanic facies.		
Available course components <input type="checkbox"/> Lecture <input type="checkbox"/> Seminar <input type="checkbox"/> Laboratory <input type="checkbox"/> Practicum <input type="checkbox"/> Online <input type="checkbox"/> _____		
Practicum work done in this class will involve children or vulnerable adults (If the "Yes" box is checked, all students and instructors will require criminal record checks) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Grading basis <input checked="" type="checkbox"/> Graded <input type="checkbox"/> Satisfactory / Unsatisfactory <input type="checkbox"/> In Progress / Complete <input type="checkbox"/> _____		
Prerequisites (if any)		
This is combined with an undergrad course. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Course number and units: EASC 421		
Additional course requirements for graduate students		

REVISED COURSE

Please complete only the fields to be changed.

Program (eg. LBST)	Number (eg. 810)	Units (eg. 4)
Course title (max 80 characters)		
Short title (appears on transcripts, max 25 characters)		
Course description for SFU Calendar <input type="checkbox"/> see attached Physical, chemical and tectonic aspects of volcanology examined with emphasis on processes of magma generation and evolution, styles of eruption, environments of deposition, and interpretation of volcanic facies. Includes two to three weekend field trips.		
Available course components <input type="checkbox"/> Lecture <input type="checkbox"/> Seminar <input type="checkbox"/> Laboratory <input type="checkbox"/> Practicum <input type="checkbox"/> Online <input type="checkbox"/> _____		
Practicum work done in this class will involve children or vulnerable adults (If the "Yes" box is checked, all students and instructors will require criminal record checks) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Grading basis <input type="checkbox"/> Graded <input type="checkbox"/> Satisfactory / Unsatisfactory <input type="checkbox"/> In Progress / Complete <input type="checkbox"/> _____		
Prerequisites (if any)		
This is combined with an undergrad course. <input type="checkbox"/> Yes <input type="checkbox"/> No		
Course number and units: _____		
Additional course requirements for graduate students		

APPROVALS

Robert
Faculty graduate studies committee name

Signature

Glyn Williams-Jones
Signature

Date

13 May 14
June 16/14
Date

Senate graduate studies committee name

Graduate Course Minor Change Form

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DEPARTMENT

Department / School / Program Earth Sciences	Contact name Dan Gibson	Contact email hdgibson@sfu.ca
Please revise the following elements of the indicated graduate course: <input type="checkbox"/> Catalogue number <input type="checkbox"/> Units <input type="checkbox"/> Title <input checked="" type="checkbox"/> Description <input type="checkbox"/> Other: _____		

CURRENT COURSE

Please complete only the fields to be changed.

Program (eg. LBST) EASC	Number (eg. 810) 624	Units (eg. 4) 3
Course title (max 80 characters) Geology of the Canadian Cordillera		
Short title (appears on transcripts, max 25 characters)		
Course description for SFU Calendar <input type="checkbox"/> see attached The stratigraphy, structure and historical geology of the Canadian Cordillera, examined from a plate tectonic perspective. Models of development of the various terranes and related entities, and their amalgamation to form the present Cordillera, will be examined in detail.		
Available course components <input type="checkbox"/> Lecture <input type="checkbox"/> Seminar <input type="checkbox"/> Laboratory <input type="checkbox"/> Practicum <input type="checkbox"/> Online <input type="checkbox"/> _____		
Practicum work done in this class will involve children or vulnerable adults (If the "Yes" box is checked, all students and instructors will require criminal record checks) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Grading basis <input type="checkbox"/> Graded <input type="checkbox"/> Satisfactory / Unsatisfactory <input type="checkbox"/> In Progress / Complete <input type="checkbox"/> _____		
Prerequisites (if any)		
This is combined with an undergrad course. <input type="checkbox"/> Yes <input type="checkbox"/> No		
Course number and units: _____		
Additional course requirements for graduate students		

REVISED COURSE

Please complete only the fields to be changed.

Program (eg. LBST)	Number (eg. 810)	Units (eg. 4)
Course title (max 80 characters)		
Short title (appears on transcripts, max 25 characters)		
Course description for SFU Calendar <input type="checkbox"/> see attached The stratigraphy, structure and historical geology of the Canadian Cordillera, examined from a plate tectonic perspective. Models of development of the various terranes and related entities, and their amalgamation to form the present Cordillera, will be examined in detail. There will also be a 4-day field trip associated with this class.		
Available course components <input type="checkbox"/> Lecture <input type="checkbox"/> Seminar <input type="checkbox"/> Laboratory <input type="checkbox"/> Practicum <input type="checkbox"/> Online <input type="checkbox"/> _____		
Practicum work done in this class will involve children or vulnerable adults (If the "Yes" box is checked, all students and instructors will require criminal record checks) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Grading basis <input type="checkbox"/> Graded <input type="checkbox"/> Satisfactory / Unsatisfactory <input type="checkbox"/> In Progress / Complete <input type="checkbox"/> _____		
Prerequisites (if any)		
This is combined with an undergrad course. <input type="checkbox"/> Yes <input type="checkbox"/> No		
Course number and units: _____		
Additional course requirements for graduate students		

APPROVALS

Faculty graduate studies committee name

Senate graduate studies committee name

Signature

Signature

Date

Date

[Signature]

[Signature]

13 Dec 14

June 14/16