S.07-103

SIMON FRASER UNIVERSITY

Senate Committee on University Priorities
Memorandum

TO: Senate

FROM: John Waterhouse
Chair, SCUP
Vice President, Academic

RE: Faculty of Science: Full Program Proposal for a Certificate in Earth Sciences (SCUP 07-34)

DATE: July 18, 2007

At its July 11, 2007 meeting SCUP reviewed and approved the full program proposal for a Certificate in Earth Sciences from the Faculty of Science.

Motion

That Senate approve and recommend to the Board of Governors, the proposal for a Certificate in Earth Sciences, in the Faculty of Science.

encl.

c: D. Marshall

SFU

SCUP 07-34

OFFICE OF THE
ASSOCIATE VICE PRESIDENT ACADEMIC AND ASSOCIATE PROVOST

MEMO

ATTENTION SenateCommittee on University Priorities	TEL
FROM Bill Krane, Chair Senate Committee on Undergraduate Studies	
CC	
RE Faculty of Science. Certificate in Earth Sciences (SCUS 07-32b)	
DATE June 28, 2007	

Action undertaken by the Senate Committee on Undergraduate Studies at its meeting of 12 June 2007 gives rise to the following recommendation:

Motion:

"that SCUP approve and recommend to Senate the Certificate in Earth Sciences."

The relevant documentation for review by SCUP is attached.

2.

1.

From: Dan Marshall
Email: marshall@sfu.ca
Phone: (604) 291-5474

SFU
Simon Fraser University
Department of Earth Sciences

Memo

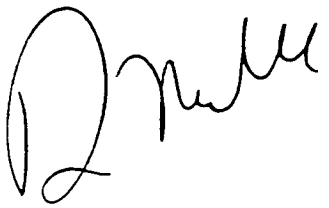
To: Rolf Mathewes
CC: Rosemary Hotell

Date: April 26, 2007

Re: **Certificate in Earth Sciences**

Please find enclosed a request from EASC to deliver a certificate in Earth Sciences. The intended purpose of this certificate is to provide both part time and full time students with the opportunity to understand the fundamentals of Earth Sciences without necessarily specialising or taking a minor in Earth Sciences. Students who complete the Certificate in Earth Sciences will have a solid grounding in the fundamentals of Earth Sciences and a greater understanding of many of the currently topical issues such as geological resources, environmental change, and geological hazards.

I also enclose a copy of the Letter of Intent, submitted previously and approved by SCUP and SCUS.



Certificate in Earth Science

This program provides both part time and full time students with the opportunity to understand the fundamentals of earth sciences without necessarily specialising in Earth Sciences.

Program Requirements
This certificate requires completion of a minimum of 23 credit hours of required course work and electives as follows:

Students must complete the following 8 credit hours:

EASC 101-3 Physical Geology (B) or GEOG 111-3 Physical Geography
EASC 106-3 Earth Through Time (B) or EASC 210-3 Historical Geology (B)
EASC 206-2 Field Geology I

and at least 15 credit hours selected from the following list of courses:

EASC 103-3 The Rise and Fall of the Dinosaurs (W, B)
EASC 104-3 Geohazards – Earth in Turmoil (B)
EASC 107-3 Economic Geological Resources (B)
REM 100-3 Global Change
GEOG 213-3 Geomorphology I
and ~~all~~ Any other 200-, 300- or 400-level EASC course

The Certificate in Earth Sciences allows students to pursue their 15 credits of electives in specific course concentrations, should they wish to do so. Some suggested electives groupings are as follows:

General Earth Sciences Breadth
EASC 103-3 The Rise and Fall of the Dinosaurs (W, B)
EASC 104-3 Geohazards – Earth in Turmoil (B)
EASC 107-3 Economic Geological Resources (B)
REM 100-3 Global Change

Paleontology Focus
EASC 103-3 The Rise and Fall of the Dinosaurs (W, B)
EASC 201-3 Stratigraphy and Sedimentation
EASC 210-3 Historical Geology (B)
EASC 310-3 Paleontology (W)

Hazards Focus
EASC 104-3 Geohazards – Earth in Turmoil (B)
EASC 303-3 Environmental Geoscience
EASC 207-3 Introduction to Geophysics (Q)

4.

GEOG 213-3 Geomorphology I
EASC 303-3 Environmental Geoscience

Environmental Focus
REM 100-3 Global Change
EASC 104-3 Geohazards – Earth in Turmoil (B)
EASC 107-3 Economic Geological Resources (B)
EASC 208-3 Introduction to Geochemistry
EASC 304-3 Hydrogeology
EASC 303-3 Environmental Geoscience

Geology Focus
EASC 201-3 Stratigraphy and Sedimentation
EASC 202-3 Introduction to Mineralogy
EASC 204-3 Structural Geology I
EASC 208-3 Introduction to Geochemistry

NOTICE OF INTENT

1. Credential to be awarded: Certificate in Earth Sciences.

2. Location: SFU Burnaby Campus

3. Faculty: Faculty of Science (Department of Earth Sciences).

4. Anticipated program start date: September 2008

5. Description of the proposed program:

a) *Aims, Goals and Objectives;*

To provide both part time and full time students with the opportunity to understand the fundamentals of Earth Sciences without necessarily specialising in Earth Sciences. Students who complete the Certificate in Earth Sciences will have a solid grounding in the fundamentals of Earth Sciences and a greater understanding of many of the currently topical issues such as geological resources, environmental change, and geological hazards.

b) *Anticipated contribution to the mandate and strategic plan of the institution;*

Courses already taught in Earth Sciences are being articulated in this Certificate in terms of their relationship to a broad general understanding of Earth Sciences. The majority of these courses are currently designated Breadth while a number of them are designated Quantitative or Writing Intensive.

c) *Target Audience*;

Both part time and full time undergraduate students from all Faculties. This certificate is specifically aimed at students wishing to broaden their understanding of Earth Sciences, but that may lack the many Science prerequisite courses necessary for a Minor in Earth Sciences.

d) *Content*;

This Certificate gives the student a basic grounding in Earth Sciences with three required courses (EASC 101-3 – Physical Geology, EASC 106-3 Earth Through Time and EASC 206-2 Field Geology I). This base is then broadened via a number of suggested Elective course groupings (General Earth Sciences Breadth, Palaeontology Focus, Hazards Focus, Environmental Focus and Geology Focus) which enable students to investigate specific areas of interest.

e) *Delivery Methods*;

Lecture courses, laboratory courses and field schools.

f) *Linkages between the learning outcomes and the curriculum design, including an indication whether a work experience/work place term is required for degree completion*;

Students acquire the basic theoretical knowledge (with Physical Geology and Earth Through Time) which they apply in a practical manner in Field Geology I. More specific topics (covered in both a theoretical and practical fashion) will be investigated in the variety of suggested Elective courses. Students from any faculty in the university may take this Certificate in Earth Sciences. Students on part-time programs will be easily accommodated by the structure of this Certificate. No work experience or work place term is required for this Certificate.

g) *Distinctive Characteristics*;

The Department of Earth Sciences has progressively expanded its curriculum since its inception and now offers a wide range of degree and certificate programs. The development of a general Certificate in Earth Sciences will offer students, who may not meet all of the Science prerequisites for a Minor, the unique opportunity to learn about a broad range of Earth Science related issues within a dynamic academic structure.

h) *Anticipated completion time in years or semesters*;

Between 2 and 5 semesters.

i) *Enrolment plan for the length of the Program*;

Approximately 5-10 students per semester; resources permitting, some of the relevant courses would be taught twice per year.

j) *Policies on student evaluation*;

Courses will be open to students from all faculties. Admission to any course will be based on the order in which students register. All of the courses in the Certificate have already been taught a number of times. The standard repertoire of individual evaluations of student performance will be applied: written tests, laboratory tests, oral presentations, written exams. Credits applied to this certificate may not be applied to another Simon Fraser University certificate or diploma.

k) *Policies on faculty appointments*;

SFU makes Faculty appointments in conformity with provincial law and its own procedures, as defined by its Board of Governors.

l) *Policies on program assessment*;

The Certificate in Earth Sciences will be governed and managed by the Department of Earth Sciences, in conformity with Faculty and University regulations. The Undergraduate Curriculum Committee of the Department of Earth Sciences meets routinely (at least four times each year) to discuss curriculum-related matters including the supervision of this certificate. All academic units at SFU are subject to review by external experts and agencies every six to ten years.

m) *Levels of support from post-secondary institutions (including plans for admissions and transfer within the British Columbia post secondary education system) and relevant regulatory or professional bodies, where applicable*;

Students from BC colleges and universities may transfer to SFU to take courses towards a Certificate in Earth Sciences. While professional registration in the field of Earth Sciences is regulated by the Association of Professional Engineers and Geoscientists of BC (APEGBC), a B.Sc. is the minimum requirement. As such, successful completion of a Certificate in Earth Sciences can not be used for professional registration.

n) *Evidence of student interest and labour market demand*;

The Department receives 5-10 enquiries each year from students wishing to take a Minor in Earth Sciences. However, due to the significant number of prerequisite science courses, most non-Science students decide against taking the Minor. The Certificate therefore meets a demand from students with a general interest in the Earth Sciences that may find this applicable to their chosen fields, e.g., Archaeology, Business, Primary and secondary Education, etc.

o) *Related programs in your own or other BC post-secondary institutions*;

The Department of Earth Sciences currently offers Honours, Major and Minor programs along with a Certificate in Forestry Geoscience. While many other post-secondary institutions in British Columbia have similar programs, none currently offer a general Certificate in Earth Sciences.

6. Institutional contact person:

Glyn Williams-Jones
Acting chair,
EASC Undergraduate Curriculum Committee
Telephone (604) 291-3306
glynwj@sfu.ca
02 August 2006