SIMON FRASER UNIVERSITY

S.75-133

MEMORANDUM

To SENATE	From SENATE COMMITTEE ON UNDERGRADUATE STUDIES
Subject NEW COURSE PROPOSAL - PHYSICS	Date SEPTEMBER 10, 1975

MOTION: "That Senate approve and recommend approval to the Board of Governors, as set forth in S.75-133, the new course proposal for PHYS 181-3 - Introduction to Physical Science in Archaeology, and the discontinuation of PHYS 281-3."

If the above motion is approved,

MOTION: "That Senate waive the normal two semester time lag requirement in order that PHYS 181-3 may be first offered in the Spring semester 76-1."

SIMON FRASER UNIVERSITY

S. 75-133

MEMORANDUM

To SENATE

From SENATE COMMITTEE ON UNDERGRADUATE STUDIE

Subject

Date 10th September, 1975

At its meeting of 26th August, the Senate Committee on Undergraduate Studies considered the attached course proposal -

PHYS 181-3: Introduction to Physical Science in Archaeology

This proposal is now forwarded to Senate for its consideration, with the Committee's recommendation that it be approved. It is further recommended that, since the Physics Department wishes to offer the course in the Spring semester, 1976 the normal two semester time lag be waived in this case.

In discussion of this proposal, it was identified that this course would replace PHYS 281-3: Physical Science in Archaeology. Both this course and the proposed one had been designed as service courses for the Department of Archaeology; and, now that PHYS 281 had been offered on a number of occasions, the Department of Archaeology had indicated that its primary need was for a more basic 100 level course for students just beginning study of the discipline. More advanced material along the lines of PHYS 281 was being incorporated in a separate Archaeology course. In view of the elimination of PHYS 281, it was agreed to insert in the course requirements that students with credit for PHYS 281 could not take this course for further credit.

I. Mugridge

:ams

att.

SCUS 75-36

SIMON FRASER UNIVERSITY

MEMORANDUM

To H. Evans
Senate Committee on Undergraduate Studies

From B.P. Beirne, Acting Dean
Faculty of Science

Subject NEW COURSE PROPOSAL - Physics

Date August 20, 1975

The Executive Committee of the Faculty of Science has approved the following new course proposal and forwards it to SCUS for consideration:

PHYS 181-3 Introduction to Physical Science in Archeology

The supporting documentation for this proposal is attached.

/pel

Encl.

B.P. Beirne

U-75-7

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information Department: PHYSICS

Abbreviation Code: PHYS Course Number: 181 Credit Hours: 3 Vector: 3-0-1

Title of Course: Introduction to Physical Science in Archaeology

Calendar Description of Course: A course in basic physical ideas and how they are applied in archaeology. Topics included are; the structure of matter, radioactive decay, electromagnetic radiation and magnetism, and how they are used in radiocarbon dating, thermoluminescence dating, magnetic dating, X-ray fluorescence analysis and magnetometer surveying.

Nature of Course Lecture, with occasional problem sessions and lab experiment

Prerequisites (or special instructions):

B.C. High School Math 12 and Physics 11. Students with credit for PHYS 281-3 cannot take this course for further credit.

What course (courses), if any, is being dropped from the calendar if this course is approved: Phys - 281-3

2. Scheduling

How frequently will the course be offered? Once per year.

Semester in which the course will first be offered? Spring or Fall 1976.

Which of your present faculty would be available to make the proponed offering possible? D.J. Huntley and others.

3. Objectives of the Course

To provide students with a basic understanding of the methods used by physical scientists to assist archaeology. It will also prepare students for the advanced archaeometry courses Arc 490 & 491 which are now being proposed.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty None

Staff None

Library None

Audio Visual None

Space None

Equipment None

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5. Approval

Date: 29 April 75 21 Aug 75

BP Chapman — Department Chairman

B.P. Bowen — Dean

Chairman, SCUS

SCUS 73-34b:- (When completing this form, for instructions see Memorandum SCUS 73-34a. Attach course outline).

Physics 181 - Course Outline

The structure of matter

Particles, forces, energy, states, magnetism, radioactive decay.

C-14 dating - the principles, assumptions, what can go wrong and how C-14 dates are converted into true dates.

Principles of the following:

Potassium - argon dating
Thermoluminescence dating
Magnetic dating
X-ray fluorescence analysis
Magnetometer surveying
and some other selected topics.

References and Source Material

Aitken, M.J., Physics and Archaeology, Wiley 1961.

Tite, M.S., Methods of Physical Examination in Archaeology, Seminar Press, 1972.

Michael, H.N. & Ralph, E.K., Dating Techniques for the Archaeologist, M.I.T. Press. 1971.

Archaeometry, a journal, Cambridge University Press.

Marion, J.B., Physical Science in the Modern World. Academic Press, 1974.

SIMON FRASER UNIVERSITY

MEMORANDUM

To Dr. D. Ryeburn Department of Mathematics	From J.C. Irwin Department of Physics
Subject Phys 181-3	Date 13 June 1975

Following our recent meeting (FUGCC) I discussed the appropriate vector description of Phys 181-3 with Dr. Huntley. He has suggested that the best choice would be a vector 3-0-1. This is consistent with the credit given with the course and I therefore endorse his suggestion. Also, please find attached a letter from the Archaeology Department supporting the offering of Phys 181-3.

JCI/mgj

J.C. Irwin

SIMON FRASER UNIVERSITY

MEMORANDUM

Dr. J. Irwin	From H.L. Alexander, Acting Chairma
Physics Department	Department of Archaeology
Subject Physics 181-3	Date June 18, 1975

The Archaeology Department and Dr. D. Huntley of Physics have cooperated in the design of a new set of Archaeometry courses, namely, Physics 181, Arc. 410 and Arc. 411. The physics course is a prerequisite to the two archaeology courses and has our support.

HLA:inb