S.71-139

SIMON FRASER UNIVERSITY

MEMORANDUM

To SENATE	From SENATE COMMITTEE ON UNDERGRADUATE STUDI
Subject NEW COURSE PROPOSAL - KINESIOLOGY 330-3	Date NOVEMBER 18, 1971

MOTION: "That Senate approve the new course proposal from the Senate Committee on the Interdisciplinary Program in Kinesiology, as set forth in Paper S.71-139:

Kinesiology 330-3 : Human Energy Metabolism."

S.71-139

SIMON FRASER UNIVERSITY

MEMORANDUM

To SENATE

From Senate Committee on Undergraduate Studies

Subject New Course Proposal - Kinesiology 330-3.

Date November 17, 1971.

The Senate Committee on Undergraduate Studies has approved the new course proposal from the Senate Interdisciplinary Committee on Kinesiology --

Kinesiology 330-3 : Human Energy Metabolism

and recommends approval by Senate.

SCUS 71-18

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Dr. J. Chase, Chairman
Senate Committee on Undergraduate Studies

From: J. S. Barlow, Acting Chairman
Interdisciplinary Committee on Kinesiology

Subject: Course Proposal: Kines. 330

Date: November 3, 1971

Enclosed for approval of the Senate Committee on Undergraduate Studies is a revised course proposal for Kinesiology 330, Human Energy Metabolism.

You will note that the prerequisite for this course has been made explicit.

J. S. Barlow

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Enclosure

cc: H. Evans
E. Banister

SIMON FRASER UNIVERSITY

FACULTY OF EDUCATION

NEW COURSE PROPOSAL

I CALENDAR INFORMATION

Department: Kinesiology Course Number: 330 Title: Kines.

Sub-title or Description:

Human Energy Metabolism

Credit Hours: 3 Vector Description: 2-0-4

Prerequisite(s): Biology 201-3

II ENROLMENT AND SCHEDULING

Estimated Enrolment: 10 - 20

Semester Offered (e.g., Yearly, every Spring, twice yearly, Fall and Spring): Yearly

When course will first be offered:

III JUSTIFICATION

A. What is the detailed description of the course including differentiation from lower level courses, from similar courses in the same department and from courses in other departments in the University?

Pathways of energy flow in animals and man, and the relationship of biological energy transduction to the needs of the whole animal. Quantitative aspects of bioenergetics and adaptation to changes in energy supply and demand. Measuring techniques applied to adaptations to muscle activity and variations in food intake.

B. What is the range of topics that may be dealt with in the course?

Pathways of energy flow in animals and man, energy balance, measurement of energy intake and expenditure.

Brief review to bioenergetics. The laws of thermodynamics and their application to biological systems. Open and closed systems. Energy production and energy, transducing mechanisms.

Oxygen delivery and utilization. Measurement of metabolic rates. Temperature regulation. Regulation of metabolism in response to changes in energy supply and demand. Regulation of food intake.

Metabolic changes in muscular exercise, in calorie undernutrition, in hypothermia, hyperthermia and overnutrition.

(cont'd on attached)

III(B) - cont'd

Probable Textbooks

Hoch, F.	Energy Transformations in Man (Saunders, 1971)
Miller, A.T.	Energy Metabolism (F.A. Davis Co., 1968)
Lehninger, A.L.	Bioenergetics (W.A. Benjamin, 1965)
Klotz, I.	Energy Changes in Biochemical Reactions (Acad. Press., 1967)
Kleiber,	The Fire of Life (Wiley, 1961)

C. How does this course fit the goals of the department?

In the study of human activity, there is increasing emphasis on events at the molecular level. The gross phenomena of movement result directly from events at the subcellular level, energy in its various forms being the common medium of exchange. The energy transducing mechanisms which link the activities of submicroscopic structures to gross observable responses are becoming known, and this course will provide the conceptual and factual information necessary for understanding these mechanisms.

D. How does this course affect degree requirements?

Course will be an upper level elective, at least in the first instance.

E. What are the calendar changes necessary to reflect the addition of this course?

Insertion of Title, Sub-title, Description and Prerequisites

F. What course, if any, is being dropped from the calendar if this course is approved?

None.

G. What is the nature of student demand for this course?

Repeated requests have been received, for remedial instruction from students who feel a need for an in-depth understanding of this material.

H. Other reasons for introducing the course.

The anticipated increase in the number of Canadian students requiring premedical and paramedical instruction, and the increasing requirement of medical schools and rehabilitation agencies for a background of study in applied human biology.

IV BUDGETARY AND SPACE FACTORS

A. Which faculty will be available to teach this course?

Allan J. Davison, Assoc. Prof., Kinesiology

B.Sc.	University of Cape Town
M.S.	Rutgers University
Ph.D.	Rutgers University

B. What are the special space and/or equipment requirements for this course?

No special requirements. Standard lecture room.

Laboratory is available in Trailer B1.

C. Any other budgetary implications of mounting this course:

Cost of teaching assistant(s) dependent on enrollment.

Minor laboratory equipment, up to $2,000
Laboratory running costs up to $1,500

To be budgeted for from Departmental running grant in so far as possible.

APPROVAL - Faculty Curriculum Committee:

Faculty:

Senate: