SIMON FRASER UNIVERSITY

S.78-51

MEMORANDUM

To Senate	From Senate Committee on Undergraduate Studies
Subject Proposed New Course - Biochemistry 440-3	Date 78-04-21

Action taken by the Senate Committee on Undergraduate Studies at its meeting of 78-04-11 gives rise to the following motion:

MOTION

That the proposed new course BICH 440-3 (Neurochemistry), as set forth in S.78-51, be approved and recommended to the Board for approval.

Note - SCUS was informed by the Faculty of Science that this course had been suggested by Dr. Davison of the Department of Kinesiology for inclusion in the Biochemistry Program, that there were indications that it would be an attractive course to students and that it is proposed as an elective course in the biochemistry program at the 400 division.

It was further suggested that the course be approved on a two-year basis in case participating departments had difficulty staffing it over the longer term. The proposed motion does not so limit approval. However, should the course prove to be less viable than anticipated, the Biochemistry Program Committee can certainly recommend that it be discontinued and, in fact, any course is automatically considered for discontinuation in the event that it is not offered during a two-year period.

Note - SCUS approved waiver of the time lag requirement so that the course could first be offered in the fall semester 1978-3 should the timing of Senate and Board approval permit its being so scheduled.

D.R. Birch

DRB/cg

SIMON FRASER UNIVERSITY

SCUS 78-19

MEMORANDUM

To Mr. H. Evans, Secretary SCUS	From Mr. N. Heath, Assistant to the Dean of Science
Subject BICH 440-3 "Neurochemistry"	Date 1978 03 29

Please find attached the documentation pertaining to a new course, BICH 440-3, "Neurochemistry".

I request that SCUS pass the following motion:-

"That the new course proposal BICH 440-3, "Neurochemistry", be approved. Further, that this course be approved for an experimental two-year period".

This course was suggested by Dr. A. Davison, of the Department of Kinesiology, for inclusion in the Biochemistry Programme. Soundings have suggested that this will be an attractive course to students and it is agreed by the Biochemistry Curriculum Committee that it would provide a valuable elective at the 400-level to the Biochemistry Programme.

There is some concern over the ability of participating Departments to staff the course in the long term and so an experimental two-year offering is being recommended.

N. Heath
Assistant to the Dean of Science

NH/amd

Attachments

F-78-1 U-71-37

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

Department: BIOCHEMISTRY

1. Calendar Information

Abbreviation Code: BICH Course Number: 440 Credit Hours: 3 Vector: 3-1-0

Title of Course: Neurochemistry

Calendar Description of Course:
"A study of the metabolism and fundamental chemistry of brain and nerve. The course will emphasize the metabolism of neurotransmitters, the biochemistry of synaptic transmission, molecular mechanisms involved in learning and mental disease, and environmental and drug influences on neural chemistry and function."

Nature of Course Lecture/Tutorial - demonstration

Prerequisites (or special instructions):

Biochemistry 301 or Biosciences 301 or Kinesiology 330.

What course (courses), if any, is being dropped from the calendar if this course is approved: None

2. Scheduling

How frequently will the course be offered? Annually

Semester in which the course will first be offered? ~~79-1~~ 78-3

Which of your present faculty would be available to make the proposed offering possible? Davison (Kinesiology) - several members from participating depts have expressed interest in offering the course. Desirable that developer of course (Davison) guide material through twice to establish standard content and outline.

3. Objectives of the Course

This course will fill a void which presently exists in the meagre selection of Biochemistry electives available to students in the biochemistry program. The course deals with an area of modern biochemistry which is rapidly growing in importance. It will be a valuable and in some cases an essential option for some students majoring in biosciences, psychology, and kinesiology.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty Davison (Kinesiology)

Staff desirable (but not mandatory or absolutely necessary). Part time teaching assistant for assistance in lecture demonstrations would be

Library A number of books and journals available. Some further acquisitions (ca $300) would be useful.

Audio Visual Normal use of audiovisual aids. 3 or 4 films will be shown.

Space Lecture hall with lab bench for demonstration

Equipment Available. For demonstrations, nominal replacement of supplies and materials.

5. Approval

Date: Nov 1/77 11 April '78

Department Chairman Dean Chairman, SCUS

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

BIOCHEMISTRY 440-3
NEUROCHEMISTRY
COURSE OUTLINE

I. The Privileged Relationship of the Brain to the Body:
   1. Introduction-the organization and function of nervous tissues.
   2. The blood-brain barrier-vulnerability of developing brain.
   3. Biochemistry of behaviour and mood, chemical and nutritional influences.
   4. Neuro-endocrine interactions, neuromuscular interactions.

II. Biochemical Specializations in the Nervous System:
   5. Electrochemistry, ionic gradients-inorganic chemistry of the axon membrane.
   6. Energy metabolism of the central nervous system.
   7. Metabolic compartmentation in the brain, enzyme mapping.
   8. Microtubular proteins-axoplasmic transport.
   9. Molecular mechanisms in memory and learning.
   10. Midterm I.

III. The Synapse and Neurotransmitters:
   11. Biochemistry of the synapse.
   12. Neuroreceptor mechanisms-cyclic nucleotides in brain function.
   13. Chemistry and metabolism of neurotransmitters I.
   14. Chemistry and metabolism of neurotransmitters II.
   15. Gamma-aminobutryic acid.
   16. Opiate receptors and endogenous opiates.

IV. Biochemical Actions of Foreign Chemicals:
   17. Neurotoxicity, oxidants, toxins, venoms, antimetabolites.
   18. Drugs of abuse: caffeine, alcohol, hallucinogens.
   19. Molecular mechanisms in drug addiction and habituation.
   20. Midterm II.

V. Molecular Mechanisms in Mental Disease:
   21. Behind every crooked thought a crooked molecule?
   22. Schizophrenia and depression.
   23. Parkinson and Huntington's Chorea, epilepsy.
   24. Aging and presenile dementias.
   25. Slow viruses, multiple sclerosis, neuromuscular degeneration.
   26. Future prospects in neurochemical research.

Demonstrations: (Selected from)
   1. Electrophysiological methods, microiontophoresis.
   2. Methods for studying energy metabolism in brain.
   3. Subcellular preparations from nervous tissues, synaptosomes, microtubules.
   4. Stereotaxic sampling and injection in rat brain.
   5. Damaging actions of oxygen and oxidant drugs.
   6. Enzymic analyses in brain samples.

TEXT:

Dunn, A. and Bandy, S.C. Functional chemistry of the brain, Halsted, New York, 1974.

REFERENCE:

McIlwain, H., and Bachelard, H. Biochemistry and the central nervous system, Churchill Livingstone, Edinburgh, 1971.

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Mr. H. Evans, Secretary SCUS	From: Dr. A.M. Unrau, Chairman Biochemistry Curriculum Committee
Subject: BICH 440-3 "Neurochemistry"	Date: 1978 03 28

There are no financial implications in connection with the 2-year experimental offering of the course BICH 440-3 "Neurochemistry".

A.M. Unrau, Chairman
Biochemistry Curriculum Committee

AMU/amd

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Mr. Larry Thomas
Collections Librarian

From: Ann Dawe
Secretary to the Dean of Science

Subject: NEW COURSE PROPOSAL: BICH 440-3 "Neurochemistry"

Date: 1978-03-23

The enclosed New Course Proposal and Course Outline will be presented to the Senate Committee on Undergraduate Studies during the next week. I would very much appreciate your informing me whether or not the library will be able to support the course proposal, as indicated. I wish to convey your reply to the Committee as quickly as possible in order that they may consider the proposal.

Thank you for your assistance.

/ad
Enclosures

SIMON FRASER UNIVERSITY

MEMORANDUM

To H.M. Evans
Secretary to S.C.U.S.

From N. Heath
Assistant to the Dean of Science

Subject BICH 440-3

Date 1978-04-04

I attach a memorandum from L. Thomas concerning the status of the library resources necessary to offer this new course. Please add the memorandum to the material to be sent to S.C.U.S. when this course is scheduled for consideration.

N. Heath

NH:km
Attach.
cc - David Ryeburn

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Ann Dawe
Secretary to the Dean of Science

From: Larry Thomas
Collections Librarian

Subject: BICH 440-3

Date: March 31, 1978

Though the suggestion of allocating $300 for library materials to support this course is appreciated, we find that the existing collection is rather strong in this area and that no additional funds would be needed. We anticipate no difficulty in providing sufficient library resources.

Larry Thomas

LET/cmfd
cc: M. Deutsch - Sciences Division, Library

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Ann Dawe, Secretary to the Dean of Science.	From: Marvin F. Wideen, Director Undergraduate Programs.
Subject: New Course Proposal BICH 440-3 "Neurochemistry"	Date: 28th March, 1978.

There is no overlap of the new course proposal BICH 440-3 "Neurochemistry" with any offerings in the Faculty of Education.

Carol Arnold for M. Wideen.

cc: H. Evans, Secretary SCUS

MFW:ca