SIMON FRASER UNIVERSITY

S.82-42

MEMORANDUM

To SENATE	**From** SENATE COMMITTEE ON UNDERGRADUATE STUDIES
Subject NEW COURSE PROPOSAL - KIN. 415-3 - NEURAL CONTROL OF MOVEMENT	**Date** APRIL 23, 1982

Action undertaken by the Senate Committee on Undergraduate Studies at its meeting of March 9, 1982 gives rise to the following motion:

> "That Senate approve and recommend approval to the Board of Governors, as set forth in S.82-42, the proposed new course KIN. 415-3 - Neural Control of Movement."

SIMON FRASER UNIVERSITY

J CUS 82-10

MEMORANDUM

To: Mr. H.M. Evans, Registrar and Secretary to the Senate Committee on Undergraduate Studies.	From: Janet Blanchet, Secretary to the Faculty of Interdisciplinary Studies Undergraduate Curriculum Committee.
Subject:	Date: March 23, 1982

Re: New Cours Proposal:
KIN. 415-3, Neural Control of Movement.
(I.S.C. 82-5)

The above-noted course was considered and approved by the Faculty of Interdisciplinary Studies Undergraduate Curriculum Committee at a meeting held on March 16, 1982. It was noted that until now this course has been offered by the Kinesiology Department under a Special Topics course number. Would you please place this item on the next agenda of the Senate Committee on Undergraduate Studies for consideration.

ATTACH.

J. M. Blanchet.

JB/pgm

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: KINESIOLOGY

Abbreviation Code: KIN Course Number: 415 Credit Hours: 3 Vector: 3-1-0

Title of Course: Neural Control of Movement

Calendar Description of Course:

An indepth treatment of neurophysiology. Synaptic inputs and cell interactions in the spinal cord are used to illustrate the general principles of interaction in the nervous system. Other topics include central and peripheral motor control, the vestibular system and the visual system.

Nature of Course Lecture/tutorial

Prerequisites (or special instructions):

KIN 306 Human Physiology II (Principles of Physiological Regulation)

KIN 326 Functional Anatomy

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? Once a year

Semester in which the course will first be offered? 1983-2. Has been taught every summer since 1979 as a special t[illegible]c

Which of your present faculty would be available to make the proposed offering possible? Dr. P. Bawa, Dr. T. Calvert

3. Objectives of the Course

KIN 306 is required for all Kinesiology majors and introduces the physiology of the nervous system. The new course will be an elective and will make available an indepth treatment for those students who require more background. The course will be particularly suited to those interested in motor control.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty

Staff

Library No additional resources

Audio Visual

Space

Equipment

5. Approval

Date: 23 Feb/82	22 Feb 82	
Department Chairman	Dean	Chairman, SCUS

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

Neural Control of Movement

The course will involve 3 hours of weekly lecturs plus 1 tutorial. Some demonstrations will be given in the neurophysiology laboratory.

The following topics will be covered in sequence

1. Gross neuroanatomy of the nervous system
2. Methods in Neuroscience
3. a) Cell excitability, biophysics
   b) Axonal transport
4. Muscle properties as controlled by the nervous system
5. Spinal reflexes
6. Interneurones: Renshaw cells, Ia inhibitory interneurones, interactions in the spinal cord, feedback and feed forward inhibition, lateral inhibition, primary afferent depolarisation and hyperpolarisation.
7. Major ascending and descending tracts.
8. Cerebellum: cell interactions in the cerebellum, afferent and efferent pathways, the position of the cerebellum in motor control
9. Motor Sensory cortex: primate studies, afferent and efferent connections.
10. Supplementary Motor Area
11. Basal Ganglia - anatomy, neurotransmitters, afferent and efferent connections, role in motor control.
12. Vestibular System: Anatomy, vestibular reflexes, control in posture and movement, connections to extraocular muscles.
13. Visual System: Anatomy, development, types of cells and responses.
14. Superior Collicules, role in the control of eye movements
15. Interaction of Visual, Motor and Vestibular Systems, especially in the cerebellum, control of eye-head movements.

Text: Mountcastle, Vol I. updated with latest papers

Evaluations:		
	Midterm 1 hr. exam	15%
	Final 2 hr. exam	30%
	Term paper (given 2 months)	30%
	Take home question sheet (given 2 months)	25%