

OFFICE OF THE
ASSOCIATE VICE PRESIDENT ACADEMIC AND ASSOCIATE PROVOST

MEMO

ATTENTION	Senate
FROM	Bill Krane, Chair Senate Committee on Undergraduate Studies
RE	Faculty of Applied Sciences (SCUS 09-01b)
DATE	February 12, 2009

Action undertaken by the Senate Committee on Undergraduate Studies at its meeting of February 5, 2009, gives rise to the following recommendation:

Motion:

That Senate approve the new Concentration in Exercise and Nutrition in Health and Disease in the Major Program in Kinesiology.

Curriculum for new Kinesiology Concentration to be Offered at the Surrey Campus - Exercise and Nutrition in Health and Disease

Rationale

A new Kinesiology concentration entitled *Exercise and Nutrition in Health and Disease* was created at the request of Dr. Mike Plischke, the Dean of the Faculty of Science. This new concentration was unanimously approved at the November Kinesiology School meeting, and is planned to start at the Surrey campus in the Fall semester, 2009.

High impact/high prevalence chronic diseases such as cardiovascular disease, diabetes and hypertension are increasing in British Columbia. In 2000/01, 36% of the adult population had a chronic condition, rising to 68% at 65 plus years. Health care costs are significantly burdened: chronic disease patients use twice the health resources of the average adult. Quality of life for patients with these chronic diseases is diminished.

Chronic conditions contribute to cardiovascular disease mortality, BC's leading cause of death. BC's predicament is double-edged: 1. The prevalence of chronic diseases will dramatically increase due to the increasingly ageing population and 2. With the increasing prevalence of obesity, chronic lifestyle diseases are frequently appearing in younger populations. For the first time in modern history, children are likely to have a shorter life expectancy than their parents. Health care strategies must move from "sick-care" to "preventive health care". Instead of focusing on treating individuals when they are sick, our children, and the general population, must be kept healthy through chronic disease prevention approaches. Otherwise, the projected obesity/diabetes epidemic alone will overwhelm the health care system. New healthcare professionals need to be trained in this area in order to not only meet the increased demand in the traditional healthcare system, but also to approach the problem in an entirely new and more efficient way.

This new Kinesiology concentration builds on the basic sciences (biology, chemistry, molecular biology, mathematics, physics, and statistics) as applied to nutrition, exercise and metabolism. A strong "practical-application" focuses on chronic disease prevention and early detection; nutrition/exercise programs to prevent chronic diseases; and nutrition/exercise programs for individuals with chronic diseases. A key new cornerstone to their training that kinesiologists have traditionally lacked is the concept of health behaviour change. There are several theories, all rooted in the social sciences, that have been shown to impact decisions and actions in people navigating the challenges of maintaining healthy lifestyle habits. This theme, along with measures to increase student retention and educational effectiveness, will be threaded throughout the curriculum. Six new courses have been created in the areas of nutrition, exercise prescription, and clinical exercise physiology, all of which will be offered at the Surrey campus. In order to learn these concepts most effectively, students will be strongly recommended to engage in a co-operative education option. Participants can work with community health initiatives and clinical programs in Surrey and Langley. SFU Surrey is conveniently situated close

to both the Fraser Health Authority and Surrey Memorial Hospital. A complement of lecturers and research faculty with strong links to the Fraser Health Authority and Surrey Memorial Hospital will be included.

This program is unique to BC, and offers strong potential for undergraduate success in a multidisciplinary research environment designed to focus on human health in the context of their families, work environments, and communities. We aim to engage diverse ethnic communities (i.e.: Aboriginal, South Asian) to optimize program planning, co-op opportunities and research initiatives in order to fully capitalize upon the rich cultural heritage that is just one of the many strengths of the Surrey campus.

The Exercise and Nutrition in Health and Disease concentration will provide a rich learning environment and lead to many career opportunities for graduates. They will be specifically trained in the areas of nutritional counseling, behavioural counseling, exercise testing, prescription, and programming for individuals at risk of developing chronic diseases and those living with the challenges of certain prevalent conditions such as diabetes and obesity. Graduates will also be prepared to enter professional and graduate school programs.

In addition to fulfilling the requirements for a BSc with a Kinesiology major, being able to use the title of "Nutritionist" in British Columbia, and fulfilling the requirements for the Certificate in Health and Fitness Studies, students will also be eligible (if they have obtained the requisite number of hours of practical experience) to obtain certifications such as:

The Canadian Society of Exercise Physiology (<http://www.csep.ca>)

- Certified Personal Trainer
- Certified Exercise Physiologist

The American College of Sports Medicine (<http://www.acsm.org>)

- Certified Personal Trainer
- Health/Fitness Instructor
- Exercise Specialist

The Canadian Diabetes Association (<http://www.cdec.ca>)

- Certified Diabetes Educator

Curriculum

NOTE: New courses are highlighted in bold and starred

Lower Division Requirements (59 credit hours)

BISC 101-4 General Biology - Breadth-Science
CHEM 121-4 - General Chemistry & Laboratory I - Q course, Breadth-Science
CHEM 122-2 - General Chemistry II - Q course
CHEM 281-4 - Organic Chemistry I & Laboratory - Q course
ENGL 199-3 - Introduction to University Writing - W course
KIN 110-3 - Human Nutrition: Current Issues
KIN 140-3 - Contemporary Health Issues
KIN 142-3 - Introduction to Kinesiology
KIN 143-3 - Exercise: Health and Performance
KIN 201-3 - Biomechanics
KIN 205-3 - Introduction to Human Physiology
KIN 207-3 - Information Processing in Human Motor Systems
KIN 212-3 - Food and Society
MATH 154-3 - Calculus I for the Biological Sciences - Q course
MATH 155-3 - Calculus II for the Biological Sciences - Q course
***MBB 201-3 - Biochemistry of the Cell**
PHYS 101-3 - Physics for the Life Sciences 1 - Q course, Breadth-Science
PHYS 102-3 - Physics for the Life Sciences II - Q course, Breadth-Science
STAT 201-3 - Statistics for the Life Sciences - Q course

University requirement: 6 credit hours of humanities PLUS 6 credit hours of social sciences in addition to the above requirements (all of which must be designated as breadth courses).

Current total of specified lower division credits = 71.

Upper Division Requirements (40 credit hours)

KIN 304-3 - Inquiry & Measurement in Kinesiology
KIN 305-3 - Human Physiology I
KIN 306-3 - Human Physiology II
***KIN 313-3 - Nutrition and the Life Cycle**
***KIN 314-3 - Nutrition and Chronic Disease**
KIN 324-4 - Principles of Human Anatomy
KIN 340-3 - Active Health: Behaviour & Promotion
KIN 343-3 - Active Health: Assessment and Programming
***KIN 344-3 - Exercise Prescription**
***KIN 405-3 - Clinical Exercise Physiology I: Cardiopulmonary and Metabolic Disorders**
***KIN 406-3 - Clinical Exercise Physiology II: Musculoskeletal and Neuromuscular Disorders**

KIN 407-3 - Human Physiology Laboratory

***KIN 417-3 - Obesity, Adipocyte Function and Weight Control**

Students must also complete two courses from the following list of courses: (6 credit hours)

KIN 312-3 - Nutrition for Fitness and Sport

KIN 375-3 - Human Growth and Development

KIN 444-3 - Cardiac disease: prevention and rehabilitation

KIN 445-3: - Advanced Cardiac Rehabilitation

KIN 461-3 - Physiological Aspects of Aging

KIN 496-3 - Directed Study I

KIN 498-3 - Directed Study II

GERO 302-3- Health Promotion and Aging

GERO 404-3 - Health and Illness in Later Life

GERO 420-4 - Sociology of Aging

GEOG 386 -4 Geography, Health and Health Care

HSCI 301-3 Foundations of Health Promotion and Health Communication

HSCI 303-3 Perspectives on Behavioural Risks

HSCI 305-3 The Canadian Health Care System

HSCI 401-3 Health Promotion: Individuals and Communities

HSCI 403-3 Health and the Built Environment

SA 417-4 - Contemporary Issues in Medical Sociology

*** new course approved at SCUS Jan 5th 2009**