SIMON FRASER UNIVERSITY

MEMORANDUM

To Members of Senate

From Office of the Dean of Graduate Studies

5.84-42

Graduate Curriculum Changes - New Subject Graduate Course, BISC 817-3

Date May 10, 1984

Action undertaken by the Executive Committee, Senate Graduate Studies Committee, at its meeting on April 30, 1984, gives rise to the following motion: -

MOTION:

"That Senate approve and recommend approval to the Board of Governors, as set forth in S.84-42 , the proposed new graduate course

BISC 817-3 Social Insects"

Kardyn Ve

J.M. Webster Dean of Graduate Studies

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dominant insect on earth, and are important predators, decomposers, and pollinators in most land habitats. In addition, they have been used and studied by biologists to elucidate basic concepts in such areas as the evolution of sociality, chemical communication, ergonomics and caste structure, and population biology. This course will examine current issues in social insect biology through readings, lectures, and student seminars.

The information on this course is not currently covered in other graduate courses, and thus this course would add an important area to our offerings in Behavioural Ecology and Entomology.

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BIOLOGICAL SCIENCES 8××

SOCIAL INSECTS

Course Outline

Instructor: Mark L. Winston (B8274, x4459)

Text: The Insect Societies by E. O. Wilson

Lecture Schedule

Presocial insects, termites Hymenoptera Evolution of social behavior

Readings (Chapter)

1,2,6 3,4,5 17

Seminars

Physiological and Behavioral mechanisms controlling caste formation

Caste and Optimization: what determines physical and temporal division of labor

Pheromones: Use by social insects in alarm and recruitment orientation

queen control over workers

Nestmate recognition and its importance for social behavior Homeostasis of the nest

Theories on the evolution of social behavior: What do the data say?

Life-history and reproduction Forgaging Ecology Economic aspects of social insects

You should pick a topic by the second or third week of class. One week prior to your presentation assign readings from Wilson and 1-2 current journal articles for discussion. Xerox copies for everyone if possible, to be given out at least a week early. You should also hand out a complete and current bibliography for your subject the day of the seminar.

Course Requirements: Grading will be based on participation in class (quality, not quantity), seminar, and a paper.