

SIMON FRASER UNIVERSITY

S.84-42

MEMORANDUM

To Members of Senate

From Office of the Dean of Graduate Studies

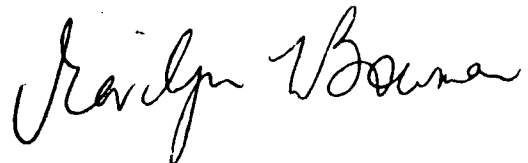
Subject Graduate Curriculum Changes - New  
Graduate Course, BISC 817-3

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"



J.M. Webster  
Dean of Graduate Studies

mm/

1. CALENDAR INFORMATION:

Department: BIOLOGICAL SCIENCES Course Number: 817

Title: Social Insects

Description: A seminar course based on current readings concerning the nature and evolution of insect social behavior

Credit Hours: 3 Vector: 3-0-0 Prerequisite(s) if any:

2. ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 10 When will the course first be offered: 84-3

How often will the course be offered: every second year

3. JUSTIFICATION:

Social insects represent one of the pinnacles of social evolution among animals.

In terms of cohesion, caste specialization, and individual altruism they are unparalleled among the social organisms. They are also the ecologically

(contd. overleaf)

4. RESOURCES:

Which Faculty member will normally teach the course: Dr. M. L. Winston

What are the budgetary implications of mounting the course: none

Are there sufficient Library resources (append details): List attached

- Appended: a) Outline of the Course
- b) An indication of the competence of the Faculty member to give the course
- c) Library resources

Approved: Departmental Graduate Studies Committee: [Signature] Date: 21 Oct 83

Faculty Graduate Studies Committee: [Signature] Date: 17 Nov

Faculty: [Signature] Date: MAR 05 1984

Senate Graduate Studies Committee: [Signature] Date: 10 May 84

Senate:  Date:

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.

BIOLOGICAL SCIENCES 8x8

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  
Foraging 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.