

DRAFT UNTIL APPROVED BY SENATE

MINUTES OF A MEETING OF THE SENATE OF SIMON FRASER UNIVERSITY HELD  
MONDAY, FEBRUARY 1, 1982, 3172 RIECKHOFF HALL, 7:00 P.M.

OPEN SESSION

Present: Pedersen, K. G., Chairman

Banister, E. W.  
Beirne, B. P.  
Bhakthan, N.M.G.  
Blaney, J. P.  
Brown, R. C.  
Calvert, T. W.  
Cleveland, W. L.  
Cochran, J. F.  
Cripps, P. G.  
Dobb, T. C.  
Eddy, N. C.  
Einstein, F.  
Hale, L. R.  
Henderson, R. E.  
Hinchcliffe, S.  
Irwin, J. C.  
Ivany, J.W.G.  
Johnston, H.J.M.  
Jones, C.H.W.  
Leiss, W.  
McKeown, B. A.  
McNabb, G. T.  
Munro, J. M.  
Nielsen, V.  
Okuda, K.  
Reilly, N. R.  
Rieckhoff, K. E.  
Roberts, M. C.  
Verdun-Jones, S. N.  
Webster, J. M.  
Weinberg, H.  
Wideen, M. F.  
Wotherspoon, A. J.

Absent:

Arrott, A. S.  
Carter, S. D.  
Cote', P. T.  
Gehlbach, R. D.  
Holmes, R. A.  
Krebs, D. L.  
Mackauer, J.P.M.  
Manley-Casimir, M. E.  
Overholt, M. J.  
Showler, J. G.  
Smith, R. J.

In attendance: George, D.

Evans, H. M., Secretary

Heath, N.

Norsworthy, R., Recording Secretary

The Chairman welcomed R. E. Henderson, recently appointed to Senate by Order-in-Council, to his first meeting. J. B. Toor has requested that a temporary replacement be elected to fill his position for the period from January 1982 to February 1983, and this election is scheduled to be conducted at the March meeting of Senate. Three student Senators are ineligible to continue to hold office as representatives of students on Senate, and a by-election will be conducted to seek replacements for W. S. Barden, J. M. Crawley, and R.D.I. Starceвич for balance terms of office to May 31, 1982.

1. APPROVAL OF AGENDA

The agenda was approved as distributed.

2. APPROVAL OF MINUTES

C. Jones referred to p.3 of the minutes of the Open Session of January 11, 1982 and a statement attributed to G. Strate that the five year plan of the Centre for the Arts had been approved in principle by Senate. T. Calvert confirmed that the statement had been made, but that it was inaccurate as the proposal for further development had been circulated for information only. With the deletion of the sentence, "G. Strate added that the plan had been approved in principle by Senate in the Spring of 1981," the minutes of the Open Session of January 11, 1982 were approved.

3. BUSINESS ARISING FROM THE MINUTES

There was no business arising from the minutes.

4. REPORT OF CHAIRMAN

a) Paper S.82-24 - Analysis - For Information

An information paper containing comparative data on operating revenues and expenditures of Canadian universities and colleges was distributed with the agenda materials.

b) Senate was informed that it is expected that the Treasury Board will reach a decision in connection with the various engineering expansion proposals from the three universities and response is expected by mid-April.

5. REPORTS OF COMMITTEES

i) Senate Committee on Academic Planning

a) Paper S.82-20 - Extended Studies Diploma - Limitation on Enrolment

Moved by J. Munro, seconded by T. Calvert,

"That Senate approve and recommend to the Board of Governors that the Department of Business Administration and the Department of Computing Science be

permitted to suspend for a period of one year beginning 1 March 1982 admission to extended studies diplomas centered in their departments."

J. Munro added that an indication of the intention to limit such enrolment would be expected to be included in advertising and other promotion in connection with diploma programs.

Question was called, and a vote taken.

MOTION CARRIED

ii) Senate Committee on Academic Planning/Senate Committee on Undergraduate Studies

a) Paper S.82-21 - Proposal for an Engineering Science Program

Moved by J. Munro, seconded by T. Calvert,

"That Senate approve and recommend approval to the Board of Governors, as set forth in S.82-21, the proposal for an Engineering Science Program, including:

- a) Academic requirements for the Engineering Science Program
  - 1) Admission - page 19
  - 2) Practical experience - Page 19, 20
  - 3) Degree requirements - page 20, 21
    - 3.1 Basic science core - page 21, 22
    - 3.2 Engineering science core - page 22, 23
    - 3.3 Concentration and Project - page 23, 24
    - 3.4 General studies - page 24, 25
  - 4) Details of the concentration areas - page 25, 26
    - 4.1 Engineering Physics
      - Electronics option - page 27, 28
      - Nuclear option - page 28, 29
    - 4.2 Industrial Processes - page 30
      - Manufacturing option - page 31
      - Process control option - page 31, 32
    - 4.3 Engineering Chemistry - page 33, 34
    - 4.4 Electronics and Communications - page 35, 36
    - 4.5 Computer Engineering - page 37, 38
    - 4.6 Bio-technology - page 39, 40
    - 4.7 Bio-medical Engineering - page 41, 42
    - 4.8 Engineering Mathematics -
      - Applied Mechanics option - page 43, 44
      - Computing and Communications option - page 44, 45
    - 4.9 Energy Engineering
      - Energy Processes option - page 46, 47
      - Energy Systems option - page 47, 48
- b) Proposed organization and development of Engineering Science - a Faculty of Engineering Science - page 57

- c) Proposed new courses in Engineering Science - pages 1 - 21
- ENSC 100-6 - Engineering Communications - page 1
- ENSC 195-0 - Job Practicum I - page 2
- ENSC 196-0 - Job Practicum II - page 2
- ENSC 212-3 - Introductory Fluid Mechanics - page 2
- ENSC 225-3 - Basic Electrical Engineering - page 3
- ENSC 230-3 - Engineering Materials - page 3
- ENSC 240-3 - Introduction to Chemical Processes - page 3
- ENSC 280-3 - Systems Dynamics - page 4
- ENSC 291 - Engineering Science Laboratory (Core) - page 4
- ENSC 292 - Engineering Science Laboratory (Core) - page 5
- ENSC 293 - Engineering Science Laboratory (Core) - page 5
- ENSC 294 - Engineering Science Laboratory (Core) - page 5
- ENSC 295-0 - Job Practicum III - page 5
- ENSC 296-0 - Job Practicum IV - page 6
- ENSC 300-3 - Engineering Design and Management - page 6
- ENSC 301-3 - Engineering Economics - page 7
- ENSC 311-3 - Engineering Thermodynamics I - page 7
- ENSC 315-3 - Analysis and Design of Machines - page 7
- ENSC 322-3 - Electronic Design I - page 7
- ENSC 324-3 - Solid State Electronics - page 8
- ENSC 340-3 - Mass Transfer - page 8
- ENSC 341-3 - Introduction to Extractive Metallurgy - page 8
- ENSC 342-3 - Chemical Unit Operations - page 9
- ENSC 380-3 - Industrial Engineering - page 9
- ENSC 382-3 - Control System Design - page 9
- ENSC 385-3 - Measurement, Instrumentation and Transducers - page 10
- ENSC 395-0 - Job Practicum V - page 10
- ENSC 400-3 - Directed Studies in Engineering Science - page 10
- ENSC 401-3 - Directed Studies in Engineering Science - page 10
- ENSC 402-3 - Directed Studies in Engineering Science - page 11
- ENSC 410-3 - Vibrations and Acoustics - page 11
- ENSC 411-3 - Engineering Thermodynamics II - page 11
- ENSC 415-3 - Advanced Strength of Materials - page 11
- ENSC 421-3 - Electronic Design II - page 12
- ENSC 425-3 - Electronic System Design - page 12
- ENSC 426-3 - High Frequency Electronics - page 13
- ENSC 427-3 - Communication Systems - page 13
- ENSC 428-3 - Data Communications - page 13
- ENSC 429-3 - Digital Control Systems - page 14
- ENSC 431-3 - Engineering in Extreme Environments - page 14
- ENSC 433-3 - Fossil Fuel Extraction - page 14
- ENSC 434-3 - Industrial Environmental Control - page 14
- ENSC 435-3 - Design of Machine Components - page 15
- ENSC 436-3 - Manufacturing Processes - page 15
- ENSC 438-3 - Automation and Robotics - page 15
- ENSC 439-3 - Computer Aided Design and Manufacturing - page 15
- ENSC 440-3 - Chemical Reaction and Process Design - page 16
- ENSC 442-3 - Introduction to Biochemical Engineering - page 16
- ENSC 444-3 - Food Processing and Engineering - page 16
- ENSC 445-3 - Chemical Process Control - page 17
- ENSC 451-3 - Seminar in Biomedical Engineering - page 17
- ENSC 460-3 - Special Topics in Engineering Science - page 17
- ENSC 461-3 - Special Topics in Engineering Science - page 17
- ENSC 462-3 - Special Topics in Engineering Science - page 17
- ENSC 470-3 - Energy Sources - page 17

- ENSC 471-3 - Energy Distribution and Utilization - page 18
- ENSC 475-3 - Introduction to Nuclear Engineering - page 18
- ENSC 480-3 - Production Systems - page 18
- ENSC 491 Engineering Science Laboratory (Concentration) - page 19
- ENSC 492 Engineering Science Laboratory (Concentration) - page 19
- ENSC 493 Engineering Science Laboratory (Concentration) - page 19
- ENSC 494 Engineering Science Laboratory (Concentration) - page 19
- ENSC 497 Internship I - page 20
- ENSC 498 Internship II - page 20
- ENSC 499-11 Engineering Science Project - page 20."

For Information: Mathematical Sciences list (page 49), Computing Sciences list (page 50), Electrical Science list (page 51), Mechanical Sciences list (page 52), Chemical Processes list (page 53), Life Sciences list (page 54), Engineering Science Course Numbering Guide (page 55), Organization and Development of Engineering Science, and Projected Financial Requirements - Engineering Science Program, relative courses, pages 22-48.

D. George, Director of the Program, was invited to participate in the discussion.

T. Calvert introduced the presentation and provided a brief history of its development which he considered to be an extremely exciting program and unique in Canada. D. George outlined details of the academically demanding program requiring a B average for continuation. He described the practical experience feature and the requirements for a breadth of studies in the development of accredited professional engineer graduates.

In response to a question raised by L. Hale, T. Calvert apologized for the oversight in not mentioning the intention to include student representation on the various committees proposed for a Faculty of Engineering Science.

F. Einstein questioned the recommendation for a new Faculty, and J. Munro stated that it was the decision of SCAP that there is a need for the program to be seen to be under the control of academic engineers and making its own way, although committee representation of six Faculties will cause some concern and interim adjustments to normal committee representation quotas will likely be required. K. Rieckhoff wanted it to be known that he did not concur with the SCAP decision.

There was some concern expressed with regard to flexibility of what appeared to be a rigid structure of course offerings, and D. George stated the intention was not to give any impression of inflexibility, that numerous details will require consultation and when the program is put into operation requirements for revision will become apparent.

J. Munro noted that the proposal would be forwarded to UCBC for Category 2 funding, which means implementation only when specific funding is available.

Question was called, and a vote taken.

MOTION CARRIED

The Chairman expressed Senate's appreciation of the work which had been done by the Director and for his attendance during the Senate deliberations.

iii) Senate Graduate Studies Committee

a) Paper S.82-22 - Approval of New Graduate Course - ENGL 815-5

Moved by B. Beirne, seconded by A. Wotherspoon,

"That Senate approve and recommend approval to the Board of Governors, as set forth in S.82-22, new Graduate Course ENGL 815-5."

Question was called, and a vote taken.

MOTION CARRIED

b) Paper S.82-23 - Graduate Curriculum Changes - Department of Geography

Moved by B. Beirne, seconded by M. Roberts,

"That Senate approve and recommend approval to the Board of Governors, as set forth in S.82-23 - Graduate Curriculum Change - Colloquium, Department of Geography."

Question was called, and a vote taken.

MOTION CARRIED

6. REPORTS OF FACULTIES

There were no reports from Faculties.

7. OTHER BUSINESS

There was no other business.

8. NOTICES OF MOTION

There were no notices of motion.

9. INFORMATION

The next regular meeting of Senate is scheduled for Monday, March 1, 1982, at 7:00 p.m.

The assembly recessed briefly at 8:00 p.m., prior to moving into Closed Session.

H. M. Evans  
Secretary