

S.87-64

FOR INFORMATION

SIMON FRASER UNIVERSITY

MEMORANDUM

TO: Senate

FROM: J.W.G. Ivany,
Chair, SCAP

SUBJECT: Faculty of Science/Faculty
of Applied Sciences -
Mathematics and Computing
Science Program
Reference: SCUS 87-9, 87-33
SCAP 87-28

DATE: Nov.19, 1987

Acting under delegated authority, SCUS approved the proposed minor curriculum revisions to the Mathematics and Computing Science Program as agreed to and recommended by the Department of Mathematics and Statistics, and School of Computing Science as set out in S.87-64.

FOR INFORMATION
SCUS 87-33
(APPENDIX TO SCUS 87-9
APPROVED SCUS-
OCT 13, 1987)

SIMON FRASER UNIVERSITY
MEMORANDUM

FOR INFORMATION

To: R. Heath, Secretary
to Senate

From: P. Dobud, Administrative
Assistant to the Dean of
Science

Subject: Calendar Changes: Mathematics &
Computing Science

Date: October 6, 1987

This is to inform you that the Faculty of Science, at its meeting held on Monday October 5, 1987 has approved the following calendar changes for the MATHEMATICS AND COMPUTING SCIENCE PROGRAM. I would appreciate it very much if you would place these motions in the agenda of the next SCUS meeting for consideration and approval.

MATHEMATICS AND COMPUTING SCIENCE PROGRAM (Paper FSC 87-8).

To approve the following calendar changes for the MATHEMATICS AND COMPUTING SCIENCE PROGRAM as follows:

i) To add to the lower division required courses:

PHIL 210-4, Elementary Formal Logic I.

ii) To approve the following changes in the Upper Division Entry as follows:

From:

UPPER DIVISION REQUIRED COURSES

i) The following courses:

MACM 316-3 Numerical Analysis I
CMPT 320-3 Social Implications of a Computerized Society
or 350-3 Information and Public Policy
390-3 Digital Circuits and Systems
405-3 Design and Analysis of Computing Algorithms

ii) The required courses in each of two of the groups a), b), c), d) below and in at least three of the groups e), f), g), h), i) below.

iii) At least one course taken from one of lists f), g), h), i) below, additional to ones used in the satisfaction of conditions i), ii) above, and further additional courses as required taken from the lists a), b), c), d), e), f), g), h), i) below to bring the total number of credits in upper division MATH courses to at least 25 and the total number of credits in upper division CMPT courses to at least 25 where, for this purpose, credit obtained in MACM courses is divided evenly between MATH and CMPT.

To:

UPPER DIVISION REQUIRED COURSES

i) The following courses:

MACM 316-3 Numerical Analysis I
CMPT 307-3 Data Structures and Algorithms.
354-3 File and Data Base Structures.
390-3 Digital Circuits and Systems.
405-3 Design and Analysis of Computing Algorithms.

and one of:

CMPT 320-3 Social Implementation of a Computerized Society.
350-3 Information and Public Policy.

ii) The required courses in each of two of the groups a), b), c), d) below and in at least two of the groups f), g), h), i), j).

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iv) Additional courses as required to bring the total number of upper division credits to at least 60.

a) **Statistics**

Required:

- MATH 372-3 Introduction to Probability and Statistics II
- 387-3 Introduction to Stochastic Processes
- 472-3 Linear Models in Statistics

Other Courses:

- MATH 473-3 Non-Parametric Statistics
- MACM 360-3 Computation for Statistical Data Processing

b) **Discrete Mathematics**

Required:

- MATH 308-3 Linear Programming
- and two of the following four courses:
- MATH 343-3 Combinatorial Aspects of Computing
 - 408-3 Discrete Optimization
 - 443-4 Combinatorial Theory
 - 445-3 Introduction to Graph Theory

c) **Numerical Analysis**

Required:

- MATH 310-3 Introduction to Ordinary Differential Equations
- 416-3 Numerical Analysis II

d) **Applied Mathematics**

Required:

- MATH 310-3 Introduction to Ordinary Differential Equations
- and two of the following five courses:
- MATH 314-3 Boundary Value Problems
 - 362-3 Fluid Mechanics I
 - 415-3 Ordinary Differential Equations
 - 418-3 Partial Differential Equations
 - 470-4 Variational Calculus

e) **Theoretical Computing Science**

Required:

- MACM 300-3 Introduction to Formal Languages and Automata with Applications

Other Courses:

- MACM 401-3 Switching Theory and Logical Design
- MACM 402-3 Automata and Formal Languages
- CMPT 406-3 Computational Geometry

f) **Computer Design and Organization**

Required: One of the following five courses

- CMPT 391-3 Microcomputer Hardware Workshop
- 400-3 Hardware Architecture
- 495-3 Digital Systems Design and Specification Lab I
- 496-3 Digital Systems Implementation Laboratory

g) **Software Systems and Programming**

Required:

- CMPT 401-3 Operating Systems

Other Courses:

- CMPT 305-3 Computer Simulation and Modeling
- 383-3 Comparative Programming Languages
- 384-3 Symbolic Computing
- 402-3 Operating Systems Software Lab.
- 404-3 Computer System Measurement and Evaluation
- 483-3 Parsing and Interpretation
- 484-3 Compiler Construction

h) **Information Systems**

Required:

- CMPT 354-3 File and Database Structures

Other Courses:

- CMPT 301-3 Information Systems Management
- 302-3 System Development Projects
- 370-3 Information System Design
- 371-3 Data Communications and Networking

iii) Additional courses as required taken from any of the lists a)-l) below to bring the total number of credits in upper division MATH courses to at least 25 and the total number of credits in upper division CMPT courses to at least 25 where, for this purpose, credit obtained in MACM courses is divided evenly between MATH and CMPT.

iv) Additional courses as required to bring the total number of upper division credits to at least 60.

a) **STATISTICS**

Required courses: *Linear Models in Applied Stat.*

- ~~MATH 372-3~~ Introduction to Probability and Statistics
- ~~STAT 330-3~~ Introduction to Stochastic Processes
- ~~STAT 387-3~~ Introduction to Stochastic Processes

- ~~STAT 450-3~~ Statistical Theory
- ~~472-3~~ Linear Models in Statistics

Other courses:

- ~~MATH 473-3~~ Non-Parametric Statistics.
- MACM 360-3 Computation for Statistical Data Processing.

b) **DISCRETE MATHEMATICS**

Required courses:

- MATH 308-3 Linear Programming.
- and two of the following four courses:
- MATH 343-3 Combinatorial Aspects of Computing.
 - 408-3 Discrete Optimization.
 - 443-4 Combinatorial Theory.
 - 445-3 Introduction to Graph Theory.

c) **NUMERICAL ANALYSIS**

Required courses:

- MATH 310-3 Introduction to Ordinary Differential Equations.
- 416-3 Numerical Analysis II.

d) **APPLIED MATHEMATICS**

Required courses:

- MATH 310-3 Introduction to Ordinary Differential Equations.
- and two of the following five courses
- MATH 314-3 Boundary Value Problems.
 - 362-3 Fluid Mechanics.
 - 415-3 Ordinary Differential Equations
 - 418-3 Partial Differential Equations
 - 470-3 Variational Calculus.

e) **COMPUTING MATHEMATICS COURSES**

Required courses:

- MACM 401-3 Switching Theory and Logical Design.
- 402-3 Automata and Formal Languages.

f) **COMPUTER DESIGN AND ORGANIZATION**

Required course:

- One of the following four courses
- CMPT 391-3 Microcomputer Hardware Workshop.
 - 400-3 Hardware Architecture.

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l) Intensive Application

Required: One of the following two courses

CMPT 351-3 Introduction to Computer Graphics
410-3 Artificial Intelligence Survey

Other Courses:

CMPT 340-3 Computers in Biomedicine
411-3 Knowledge Representation
413-3 Computational Linguistics
451-3 Interactive Graphics and Animation Systems

General Requirements

The program is subject to the general regulations of the Faculty of Science and of the University. Admission to courses and requirements relating to satisfaction of prerequisites are subject to the requirements of the departments offering the courses. Admission to and continuation in the program is subject to the obtaining of and maintenance of an overall GPA of at least 3.00.

495-3 Digital Systems Design and Specification Lab.
499-3 Special Topics in Computer Hardware.

Other courses:

490-3 VLSI Systems Design.
496-3 Digital Systems Implementation Laboratory.

g) COMPUTING SYSTEMS

Required course:

One of the following two courses

CMPT 371-3 Data Communications and Networking.
401-3 Operating Systems.

Other courses:

CMPT 402-3 Operating Systems Software
404-3 Computer System Measurement and Evaluation.
479-3 Special Topics in Computing Systems

h) PROGRAMMING LANGUAGES AND SOFTWARE

Required:

One of the following two courses

CMPT 383-3 Comparative Programming Languages.
384-3 Symbolic Computing.

Other courses:

483-3 Parsing and Interpretation.
484-3 Compiler Construction.
489-3 Special Topics in Programming Languages.

i) INFORMATION SYSTEMS

Required:

One of the following three courses

CMPT 301-3 Information Systems Management.
370-3 Information Systems Design.
459-3 Special Topics in Database Systems.

Other courses:

CMPT 302-3 System Development Projects.

j) ARTIFICIAL INTELLIGENCE

Required: One of the following three courses

CMPT 410-3 Artificial Intelligence Survey.
412-3 Computational Vision.
413-3 Computational Linguistics.

Other courses:

411-3 Knowledge Representation.
419-3 Special Topics in Artificial Intelligence.

k) THEORETICAL COMPUTING SCIENCE

CMPT 406-3 Computational Geometry.
409-3 Special Topics in Theoretical Computing Science.
MACM 300-3 Formal Language and Automata with Applications.

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1) INTENSIVE APPLICATIONS

CMPT	305-3	Computing Simulation and Modelling.
	340-3	Computers in Biomedicine.
	351-3	Introduction to Computer Graphics.
	362-3	Computers in Education.
	451-3	Interactive Graphics and Animation Systems.

GENERAL REQUIREMENTS

The program is subject to the general regulations of the Faculty of Science and of the university. Admission to courses and requirements relating to the satisfaction of prerequisites are subject to the requirements of the departments offering the courses. Admission to and continuation in the program is subject to the obtaining of and maintenance of an overall GPA of at least 3.00.

COURSE DESCRIPTION

Course description for Computing Science, Mathematics and MACM courses are given on pages ??, ??, ?? of this calendar.

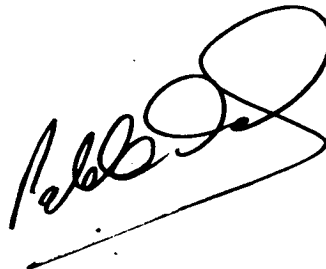
MATHEMATICS/COMPUTING SCIENCE COURSES MACM) FACULTIES OF APPLIED SCIENCES AND SCIENCE.

The following courses form part of the programs in Mathematics and in Computing Science (see page ??? of this calendar).

MINIMUM GRADE REQUIREMENT

Student wishing to register for Mathematics/Computing Science courses must have obtained grades of C- (C for MACM 360) or better, in prerequisite courses. Students will not normally be permitted to enrol in any MACM course for which a D grade or lower was obtained in any prerequisite.

Thank you.



cc: Dr. A. Freedman, Chairman, Department of Mathematics and Statistics.

FOR INFORMATION

S I M O N F R A S E R U N I V E R S I T Y
 Department of Mathematics and Statistics
 memorandum

To: MACM Committee
 UG Chairman of MATH & CMPT
 Chairman of MATH & CMPT

From: R. Harrop
 Math/Computing

Re: MACM CALENDAR CHANGES

Date: July 16, 1987

The proposals submitted some months ago to the Mathematics and Statistics Department and the School of Computing Science passed through Mathematics and Statistics and the Faculty of Science but after delay were referred back by Computing Science to take into account further changes to the Computing Calendar (deletion of 2 courses namely 392, 491). There was also a request that prerequisite structure be shown in the Computing groups. The earlier format covered better the unusual case of a student 'exempted' from a 'required' course taking a 'later' course for which the 'exempted' course was a prerequisite. The new format is clearer in a 'normal' situation. Note has also been taken of the fact that 2 courses originally in group (k) were required under section (1) of upper division requirements.

The new format of the regulations is unchanged from the old one as far as the actual content of the regulation is concerned. I hope it will be approved 'by all members of the MACM committee and that it will now be acceptable both to Mathematics and to Computing.

Since no content change is being made I will assume everything is satisfactory from the MACM point of view if I do not receive a response to the contrary within 10 days of the issuing of this revision. If a negative response is received, I will call a meeting of the committee. I will inform the Department and School as to whether or not a meeting of MACM is being called. Meanwhile I would appreciate knowing if there is likely to be any further criticism of the document.

I am not opposed to changes in principle, but feel it essential that the MACM calendar is brought reasonably into line with the others and that this be done with absolutely minimum delay. I think that during 1987/88 we might wish to consider whether there are changes in substance required to the program, for example, some members of Mathematics have expressed a wish to alter the MATH portion of the requirements to include additional areas of the discipline as possible areas of study. Side effects of the changes related to the dropping of the old MACM 306 and the introduction that took place of more automata theory with the CMPT courses may also need discussion now that the new courses are settling down.

FOR INFORMATION

If anyone wishes to contact me and I am not on campus the best way is through E-Mail (RONALD HARROP on the MTS system). I access SFU MTS mail regularly from TRIUMF and UBC.



R. Harrop