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MEMORANDUM

ATTENTION Senate
FROM Bill Krane, Chair
RE: Senate Committee on Undergraduate Studies
Faculty of Applied Sciences (SCUS 10-13)

DATE February 5, 2010
PAGES 1/1

**For information:**

Acting under delegated authority at its meeting of February 4, 2010, SCUS approved the following curriculum revisions:

1. School of Engineering Science (SCUS 10-13a)

(i) New courses:

ENSC 104-3, Engineering Graphics and Design

ENSC/CMPT 105W-3, Process, Form and Convention in Professional Genres

ENSC/CMPT 106-3, Applied Science, Technology and Society

(ii) Vector changes for ENSC courses:

ENSC 230, 327, 330, 350, 372, 374, 376, 380, 383, 387, 424, 425, 426, 427, 428, 429, 450, 472, 474, 476, 481, 483, 488, 489, 495

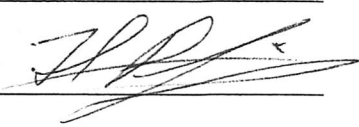
Senators wishing to consult a more detailed report of curriculum revisions may do so on the Web at http://www.sfu.ca/senate/Senate_agenda.html following the posting of the agenda. If you are unable to access the information, please call 778-782-3168 or email bgrant@sfu.ca.



FACULTY OF APPLIED SCIENCES

MEMO

Office of the Dean
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Applied Science Bldg
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ATTENTION	Bill Krane, Chair SCUS
FROM	Fred Popowich, Associate Dean, Faculty of Applied Sciences 
RE	Faculty of Applied Sciences Undergraduate Curriculum Changes
DATE	January 25, 2010

The following 3 changes have been approved by the FAS Undergraduate Curriculum Committee and are appended here for approval by SCUS and recommendation to Senate.

1. Full Proposal for Systems One Program at Surrey, including the introduction of three new courses and changes to calendar wording
 - a. ENSC 104-3 Engineering Graphics and Design
 - b. CMPT/ENSC 105W-3 Process, Form and Convention in Professional Genres
 - c. CMPT/ENSC 106-3 Science, Technology and Society
 - d. Calendar changes to FAS and Computing Science calendar entries

2. CMPT Pre-requisite changes for 26 courses, as a consequence of (historical) deletion of CMPT 101, CMPT 103, CMPT 104, CMPT 105, CMPT 201, CMPT 205, CMPT 260, CMPT 290, and CMPT 390.

*deferred by
Jans
4 Sept
mtg*

- | | |
|---------------|---------------|
| a. CMPT 100-3 | n. CMPT 310-3 |
| b. CMPT 102-3 | o. CMPT 318-3 |
| c. CMPT 120-3 | p. CMPT 320-3 |
| d. CMPT 125-3 | q. CMPT 340-3 |
| e. CMPT 126-4 | r. CMPT 354-3 |
| f. CMPT 128-3 | s. CMPT 361-3 |
| g. CMPT 150-3 | t. CMPT 363-3 |
| h. CMPT 212-3 | u. CMPT 365-3 |
| i. CMPT 218-3 | v. CMPT 379-3 |
| j. CMPT 225-3 | w. CMPT 383-3 |
| k. CMPT 250-3 | x. CMPT 417-3 |
| l. CMPT 301-3 | y. CMPT 418-3 |
| m. CMPT 305-3 | z. CMPT 499-3 |

3. Change in Vector for ENSC courses (addition of one hour of tutorial without change in number of credits) as described in letter from School Director in memo dated Dec 18, 2009)

- | | | |
|---|------------|--|
| a | ENSC 230-4 | Introduction to Mechanical Design |
| b | ENSC 327-4 | Communication Systems |
| c | ENSC 330-4 | Engineering Materials |
| d | ENSC 350-3 | Digital Systems Design |
| e | ENSC 372-4 | Biomedical Instrumentation |
| f | ENSC 374-4 | Biomedical Image Acquisition |
| g | ENSC 376-4 | Introduction to Optical Engr. And Design |
| h | ENSC 380-3 | Linear Systems |
| i | ENSC 383-4 | Feedback Control Systems |
| j | ENSC 387-4 | Int. to Electromech. Sensors and Act. |
| k | ENSC 424-4 | Multimedia Commun. Eng. |
| l | ENSC 425-4 | Electronic System Design |
| m | ENSC 426-4 | High Frequency Electronics |
| n | ENSC 427-4 | Communication Networks |
| o | ENSC 428-4 | Data Communications |
| p | ENSC 429-4 | Discrete-Time Systems |
| q | ENSC 450-4 | VLSI Systems Design |
| r | ENSC 472-4 | Rehab. Engineering and Assistive Devices |
| s | ENSC 474-4 | Biomedical Signal and Image Processing |
| t | ENSC 476-4 | Biophotonics |
| u | ENSC 481-4 | Designing for Reliability |
| v | ENSC 483-4 | Modern Control Systems |
| w | ENSC 488-4 | Introduction to Robotics |
| x | ENSC 489-4 | CAD and CAM |
| y | ENSC 495-4 | Intro to Microelctronic Fab. |



SENATE COMMITTEE ON
UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL

✓
s/c

COURSE NUMBER ENSC 104-3

COURSE TITLE

LONG — for Calendar/schedule, no more than 100 characters including spaces and punctuation

Engineering Graphics and Design

AND

SHORT — for enrollment/transcript, no more than 30 characters including spaces and punctuation

Engineering Graphics and Design

CREDITS

Indicate number of credits for: Lecture 3 Seminar _____ Tutorial _____ Lab 3

COURSE DESCRIPTION (FOR CALENDAR). 50-60 WORDS MAXIMUM. ATTACH A COURSE OUTLINE TO THIS PROPOSAL.

This course teaches the fundamentals of graphical communication in order to help students think and communicate visually in the context of engineering design. The course focuses on concepts such as isometric, multi-view sketches, section view, and auxiliary views, tolerancing and dimensioning, as well as fundamentals of schematics and printed circuit boards design. Various computer aided design software are used.

PREREQUISITE

None

COREQUISITE

None

SPECIAL INSTRUCTIONS

Students with credit for ENSC 104-3 cannot take ENSC 204-1 for further credit. ENSC 104-3 fulfills the requirements of ENSC 204-1, but ENSC 204-1 does not fulfill the requirements of ENSC 104-3.

COURSES(S) TO BE DELETED IF THIS COURSE IS APPROVED None

NOTE: APPROPRIATE DOCUMENT FOR DELETION MUST BE SUBMITTED TO SCUS

RATIONALE FOR INTRODUCTION OF THIS COURSE

Currently, the TechOne and Science Year One programs provide entry pathways for Software Systems (SoSy) and Mechatronics Systems Engineering (MSE) majors at the Surrey campus. There is general agreement that the TechOne courses are not well-matched to the needs of SoSy and MSE. The Science Year One program is a viable alternative for prospective SoSy majors, but the proposed Systems One program will provide a more focused direct entry option for students who have already decided to major in Software Systems. Systems One has been designed to take advantage of the natural synergies between the technology-oriented Software Systems and Mechatronics programs. The Mechatronics core courses includes the proposed ENSC-104, a Software Systems course, a Mechatronics course, and a technical writing course which meets SFU requirement for a lower division writing intensive course.



SCHEDULING AND ENROLLMENT INFORMATION

Indicate effective **term and year** course would first be offered and planned **frequency** of offering thereafter:
(NOTE: There is a two-term wait for implementation of any new course.)

2010-Fall, Offered once a year

Indicate if there is a waiver required: YES No

Will this be a required or elective course in the curriculum? REQUIRED ELECTIVE

What is the probable enrollment when offered? Estimate 100 (first year Systems One students)

Which of your present CFL faculty have the expertise to offer this course?
Mike Sjoerdsma (ENSC)

Are there any proposed student fees associated with this course other than tuition fees? YES NO
(If yes, attach mandatory supplementary fee approval form.)

RESOURCE IMPLICATIONS

NOTE: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by a library report and, if appropriate, confirmation that funding arrangements have been addressed.

Campus where course will be taught Surrey

Library report status _____

Provide details on how existing instructional resources will be redistributed to accommodate this new course. For example, will another course be eliminated or will the frequency of offering of other courses be reduced; are there changes in pedagogical style or class sizes that allow for this additional course offering?
This course is a new course replacing Tech 106. It would require resources that were allocated to teach the Tech 106 course. This includes space and instructors' salaries.

List any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc:

Articulation agreement reviewed? YES NO Not Applicable

OTHER IMPLICATIONS



APPROVALS

- 1. Departmental approval indicates that the Department or School has approved the content of the course, and has consulted with other Departments/Schools/Faculties regarding proposed course content and overlap issues.

Kap Kot Gft Jan 26, 2010
 Chair, Department/School Date

ESL Jan 26, 2010
 Chair, Faculty Curriculum Committee Date

- 2. Faculty approval indicates that all the necessary course content and overlap concerns have been resolved, and that the Faculty/School/Department commits to providing the required Library funds.

[Signature] Jan 26, 2010
 Dean or designate Date

LIST which other Departments, Schools and Faculties have been consulted regarding the proposed course content, including overlap issues. Attach documentary evidence of responses.

FCAT
 Science
 Arts

Other Faculties approval indicated that the Dean(s) or Designate of other Faculties AFFECTED by the proposed new course support(s) the approval of the new course:

_____ Date _____
 _____ Date _____

- 3. SCUS approval indicates that the course has been approved for implementation subject, where appropriate, to financial issues being addressed.

COURSE APPROVED BY SCUS (Chair of SCUS):

_____ Date _____

APPROVAL IS SIGNIFIED BY DATE AND APPROPRIATE SIGNATURE.

ENSC 104-3 Engineering Graphics and Design

This course teaches the fundamentals of graphical communication in order to help students think and communicate visually in the context of engineering design. The course focuses on representing three-dimensional objects in two-dimensional space using various views, such as isometric, multi-view sketches, section view, and auxiliary views. Tolerancing and dimensioning, as well as notation for manufacturing will also be discussed. Through the use of computer aided design (CAD) tools (e.g. Solidworks), students will apply the theory to real-world problems where they will be required to dissect, graphically represent, and redesign mechatronic products.

This course also teaches fundamentals of schematics and printed circuit boards design. Students will have the opportunity to create circuits in software (e.g., Eagle) and will understand various conventions and terminology surrounding circuits.

Course Content

Engineering Graphics

- Sketching and visualization
- Orthographic projections
- Axonometric and oblique views (isometric, diametric, trimetric)
- Multiview drawings
- Auxiliary views (descriptive geometry)
- Cross-sections
- Dimensioning, tolerancing, and manufacturing notes
- Assembly drawing and bill of materials (BOM)

CAD (e.g. SolidWorks)

- Creating parts (sketching, extruding, cutting, fillets, chamfers, shelling, etc.)
- Creating assemblies (simple and advanced mates)
- Animating, simulating, and rendering

Schematics and Printed Circuit Boards

- Introduction to common circuit parts (resistors, transistors, capacitors, etc.)
- Introduction to schematics
- Introduction to PCB layout
- Use of CAD software for creating schematics and PCBs (e.g., Eagle)

Design

- Design taught implicitly through projects
- Design in industry

Delivery Method

Lecture: two 1.5-hour sessions per week

Lab: one 3-hour session per week (24 students per session)

Textbook

- Technical Graphics Communication, 3rd edition, Gary R. Bertoline and Eric N. Wiebe. McGraw Hill, 2000.
- PCB book TBD – the above book has some content (Chapter 23)

Assessment

Assignments	10%
Attendance/Participation	5%
Midterm	15%
Project(s)	30%
Final	40%

Projects

1. Product dissection and modeling (e.g., disposable camera)
2. Re-design of an existing product

Resources

<http://www.mne.psu.edu/simpson/courses/me240/>

<http://gicl.cs.drexel.edu/wiki/CIBER-U>

http://gicl.cs.drexel.edu/wiki/2008_ASEE_Workshop

Re: New courses - ENSC/CMPT 105W

Thursday, March 11, 2010 3:52:33 PM

From: slrhodes@sfu.ca

To: bgrant@sfu.ca

That's because they haven't sent us anything. It's something I need to address with them.

Susan

>Susan

>

>

>

>At the March 1st Senate meeting, the following new courses were approved:

>

>

>

>ENSC 105W/CMPT 105W Process, Form, and Convention in Professional Genres

>

>

>

>I don't recall seeing an email from you advising me that these

>courses have received approval from your committee. Please confirm.

>Thanks,

>

>

>

>Bobbie

--

Susan Rhodes

Coordinator, University Curriculum & Institutional Liaison

Office of the Vice-President, Academic

Simon Fraser University

Tel: 778-782-3312

Fax: 778-782-5876

Email: slrhodes@sfu.ca

Website: <http://www.sfu.ca/ugcr/>

SIMON FRASER UNIVERSITY
Senate Committee for Undergraduate Studies
NEW COURSE PROPOSAL

*W-designation verbally
approved by S. Rhodes
Apr 10/10 - will follow
up with email*

Course Number: **ENSC 105W/CMPT 105W**

3 credits

Course Title:

Long - for calendar/schedule no more than 100 characters including spaces/punctuation

Process, Form, and Convention in Professional Genres

AND

Short - for registration/transcript no more than 30 characters including spaces/punctuation

Process of Professional Writing

State number of hours for Lect (**3**) Sem () Tut () Lab ()

Course Description (for Calendar). Attach a course outline to this proposal.

The course teaches fundamentals of informative and persuasive communication for professional engineers and computer scientists in order to assist students in thinking critically about various contemporary technical, social, and ethical issues. It focuses on communicating technical information clearly and concisely, managing issues of persuasion when communicating with diverse audiences, presentation skills, and teamwork.

Prerequisite: **None**

Corequisite: **CMPT 106 or ENSC 106**

Special Instructions: i.e. does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses. If so, this should be noted in the pre-requisite.

This course is identical to CMPT 106⁵W [ENSC 105W] and students cannot take both for credit.

This course is equivalent to ENSC 101W-1 and ENSC 102W-1 combined. Students with credit for this course cannot take ENSC101W or ENSC 102W for further credit.

Course(s) to be dropped if this course is approved:

None

Rationale for Introduction of this Course:

This course forms part of a joint first-year program called Systems One for students in the new Faculty of Applied Sciences, and helps introduce them to the foundations of their disciplines. It is paired with ENSC 106/CMPT 106: *Science, Technology and Society*.

Scheduling and Registration Information:

Indicate effective **semester/year** course would be first offered and planned **frequency** of offering thereafter. **First offered Spring 2011 and every year thereafter.**

There is a two-semester wait for implementation of any new course.

Waiver required **No**

Will this be a required or elective course in the curriculum?

Required for intended Mechatronics System Engineering and Software Systems majors

What is the probable enrolment when offered?

100

Which of your present CFL faculty have the expertise to offer this course?

Whitmore, Sjoerdsma (ENSC)/Khangura, Kirkpatrick (CMPT)

Are there any proposed student fees associated with this course other than tuition fees? (if so, attach mandatory supplementary fee approval form)

No.

Resource Implications:

Note: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each

new course proposal must be accompanied by a library report and, if appropriate, confirmation that funding arrangements have been addressed.

Campus where course will be taught: **Surrey**

Library report status **No library resources required**

Provide details on how existing instructional resources will be redistributed to accommodate this new course. For instance, will another course be eliminated or will the frequency of offering of other courses be reduced; are there changes in pedagogical style or class sizes that allow for this additional course offering?

This course is a new course replacing Tech 101W. It would require resources that were allocated to teach the Tech 101W course. This includes space and instructors' salaries.

Any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc.

No

Approvals

1. **Departmental approval** indicates that the Department has approved the content of the course, and has consulted with other Departments and Faculties regarding proposed course content and overlap issues.


Keef Keef Aftu Jan 26, 2010
Chair, School of Engineering Science Date

[Signature] Jan 26, 2010
Chair, Faculty Curriculum Committee, ENSC Date

R. Cameron JAN. 26, 2010
Chair, School of Computing Science Date

A. E. Herbatach Jan 26 2010
Chair, Faculty Curriculum Committee, CMPT Date

2. **Faculty approval** indicates that all the necessary course content and overlap concerns have been resolved, and that the Faculty/Department commits to providing the required Library funds.

 Date: Jan 26, 2010
Dean or Designate

List which other Departments and Faculties have been consulted regarding the proposed course content including overlap issues. *Attach documentary evidence of responses.*

FCAT
Science
Arts

Other Faculties approval indicates that the Dean(s) or designate of other Faculties affected by the proposed new course support(s) the approval of the new course.

_____ Date: _____
_____ Date: _____

3. SCUS approval indicates that the course has been approved for implementation subject, where appropriate, to financial issues being addressed.

Course approved by SCUS (Chair of SCUS)
_____ Date: _____

Approval is signified by date and appropriate signature.

ENSC 105W-3 / CMPT 105W-3

Process, Form, and Convention in Professional Genres

Within the context of writing processes, ENSC 105W/CMPT 105W teaches the fundamentals of informative and persuasive communication for professional engineers and computer scientists in order to assist students in thinking critically about various contemporary technical, social, and ethical issues. The course focuses on communicating technical information clearly and concisely as well as managing issues of persuasion when communicating with diverse audiences. In addition to several individual assignments related to writing, ENSC 105W/CMPT 105W provides an opportunity for students to work on a team developing and delivering a PowerPoint and a poster presentation. Students are also introduced to the University's Co-op program and are provided an opportunity to write and revise their resumes.

Note that ENSC 105W/CMPT 105W meets the SFU requirement for a lower division writing intensive course. Also note that the assignments and tutorials are integrated with those in ENSC 106-3/CMPT 106-3 (*Science, Technology and Society*).

Course Content

- Writing and Thinking Processes
 - Inventing, organizing, and planning
 - Drafting and research
 - Revising and editing
 - Team communication processes
 - Critical and creative thinking
 - Professional journals
 - Academic integrity
- Form and Format
 - Design for persuasive and informative papers
 - Layout of resumes and cover letters
 - Design for PowerPoint presentations
 - Layout of poster presentations
- Conventions
 - IEEE and APA reporting and referencing conventions
 - Organizational conventions for technical reports
 - Paragraphing, style, and punctuation conventions

Delivery Method

- Lecture: One 2-hour session per week and one 1-hour session per week
- Online exercises and discussion groups

Textbook

- *Strategies for Engineering Communication*. Steve Whitmore and Susan Stevenson. John Wiley and Sons, 2002.

Assessment

- Written Assignments 50%
- Participation 10%
- Quizzes 20%
- Team Presentations 20%

Projects

1. Individual

- Informative Paper (e.g., *How Nuclear Reactors Work*)
- Persuasive Paper (e.g., *Should Nuclear Reactors be Built in BC*)
- Resume and Cover Letter

2. Team-based

- PowerPoint Presentation
- Poster Presentation

Pre-requisites:

- None

Corequisites

- One of the equivalent courses CMPT 106-3 or ENSC 106-3 are co-requisites with ENSC 105W/CMPT 105W

Special Instructions

- CMPT 105W [ENSC 105W] is identical to ENSC 105W [CMPT 105W] and students cannot take both for credit

✓
slc

SIMON FRASER UNIVERSITY
Senate Committee for Undergraduate Studies
NEW COURSE PROPOSAL

Course Number: **ENSC 106/CMPT 106** *3 credits*

Course Title: ^{Applied} **Science, Technology and Society**

Long - for calendar/schedule no more than 100 characters including spaces/punctuation

AND

Short - for registration/transcript no more than 30 characters including spaces/punctuation
Science, Technology and Society

State number of hours for Lect (**3**) Sem () Tut (**1**) Lab ()

Course Description (for Calendar). Attach a course outline to this proposal.

Reviews the different modes of thought characteristic of science, engineering and computing. Examines the histories and chief current research issues in these fields. Considers the ethical and social responsibilities of engineering and computing work.

02370

Prerequisite: **None; students who have taken ENSC 100 cannot take this course for credit**

Corequisite: **ENSC 105W or CMPT 105W**

Special Instructions: i.e. does this course replicate the content of a previously approved course to such an extent that students should not receive credit for both courses. If so, this should be noted in the pre-requisite.

This course is identical to CMPT 106 [ENSC 106] and students cannot take both for credit.

Course(s) to be dropped if this course is approved:

None

Rationale for Introduction of this Course:

This course forms part of the joint Systems One program for students in the new Faculty of Applied Sciences, and helps introduce them to the foundations of their disciplines. It is paired with a writing course, ENSC 105W or CMPT 105W.

Scheduling and Registration Information:

Indicate effective **semester/year** course would be first offered and planned **frequency** of offering thereafter. **First offered Spring 2011 and every year thereafter.**

There is a two-semester wait for implementation of any new course.

Waiver required **Yes**

Will this be a required or elective course in the curriculum?

Required for intended Mechatronics System Engineering and Software Systems majors

What is the probable enrolment when offered?

100

Which of your present CFL faculty have the expertise to offer this course?

Jones, Chapman (ENSC)/Khangura, Kirkpatrick (CMPT)

Are there any proposed student fees associated with this course other than tuition fees? (if so, attach mandatory supplementary fee approval form)

No.

Resource Implications:

Note: Senate has approved (S.93-11) that no new course should be approved by Senate until funding has been committed for necessary library materials. Each new course proposal must be accompanied by a library report and, if appropriate, confirmation that funding arrangements have been addressed.

Campus where course will be taught: **Surrey**

Library report status **No library resources required**

Provide details on how existing instructional resources will be redistributed to accommodate this new course. For instance, will another course be eliminated or will the frequency of offering of other courses be reduced; are there changes in pedagogical style or class sizes that allow for this additional course offering?

This course will replace Tech 114, part of the current TechOne program, as a part of a new first-year program adapted to the needs of students in the new Faculty of Applied Sciences

Any outstanding resource issues to be addressed prior to implementation: space, laboratory equipment, etc.

No

Approvals

1. **Departmental approval** indicates that the Department has approved the content of the course, and has consulted with other Departments and Faculties regarding proposed course content and overlap issues.

Karl Kat Glt Jan 26, 2010
Chair, School of Engineering Science Date

[Signature] Jan 26, 2010
Chair, Faculty Curriculum Committee, ENSC Date

R. Cameron JAN. 26, 2010
Chair, School of Computing Science Date

A. E. Kirkpatrick Jan 26 2010
Chair, Faculty Curriculum Committee, CMPT Date

2. **Faculty approval** indicates that all the necessary course content and overlap concerns have been resolved, and that the Faculty/Department commits to providing the required Library funds.

[Signature] Date: Jan 26, 2010
Dean or Designate

List which other Departments and Faculties have been consulted regarding the proposed course content including overlap issues. *Attach documentary evidence of responses.*

FCAT
Science
Arts

Other Faculties approval indicates that the Dean(s) or designate of other Faculties affected by the proposed new course support(s) the approval of the new course.

_____ Date: _____

_____ Date: _____

3. SCUS approval indicates that the course has been approved for implementation subject, where appropriate, to financial issues being addressed.

Course approved by SCUS (Chair of SCUS)

_____ Date: _____

Approval is signified by date and appropriate signature.

ENSC 106/CMPT 106

Science, Technology and Society

Prerequisites: None.

Overview:

Surveys the historical development of engineering, computing, and the sciences. Evaluates the impact of engineering on the environment and on global development. Discusses ethical issues in engineering and computing in the light of selected case studies, including the Therac 25 incident. Examines several current research issues in engineering and computing, such as nanotechnology and artificial intelligence. Reviews the history and aims of the technocracy movement. During the semester, students work on a practical design project in small teams. Paired with a writing course in which students write a 3,000-word research paper.

Required Readings:

John Jones, *The Betterment of the Human Condition*, 1st edition. Pearson 2009.

Additional materials will be placed on reserve (or can be found at the library) throughout the semester.

Course Requirements:

Group design project	20%
Attendance/Seminar Participation	10%
Oral presentation	10%
In-Class Quizzes	30%
Final Paper	30%

The School expects that the grades awarded in this course will bear some reasonable relation to established university-wide practices with respect to both levels and distribution of grades. In addition, the School will follow Policy T10.02 with respect to "Intellectual Honesty" and "Academic Discipline" (see the current Calendar, General Regulations section).

SCHEDULE

History of engineering and computing; Logical thinking and why it's important; includes the beginnings of formal logic, Leibniz's Stepped Reckoner, Boole's Laws of Thought and Babbage's Analytical Engine.

Different modes of thinking in the sciences, computing and engineering: thermodynamics; modeling; design; information theory; algorithmic and heuristic reasoning; chaos and randomness. Major divisions of the engineering and computing disciplines.

Pathological or 'junk' science; pathological forms of engineering and computing.

Ethical responsibilities of the technologist; review of engineering and computing disasters; hardware and software reliability. Military applications.

Engineering and the Developing World; the digital divide. Environmental impacts.

High-level description of some outstanding problems in computing; fundamental differences in developing software for embedded systems vs. PC's

Introduction to/History of Artificial Intelligence and its prospects; the Turing test.

Nanotechnology and swarm computing.

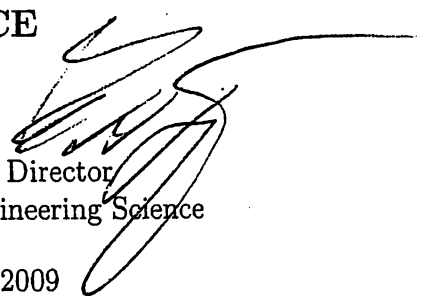
Engineering Management and Software project management. Engineers as Rulers: the Technocracy movement.

Space Engineering

Speculation on prospects for the future

SCHOOL OF ENGINEERING SCIENCE MEMORANDUM

To: Jo Hinchliffe, Secretary
SCUS

From: Mehrdad Saif 
Professor and Director
School of Engineering Science

Subject: Scheduled tutorial for ENSC
courses

Date: December 18, 2009

This is to inform the University that the School of Engineering Science has approved and is instituting a formal scheduled one hour tutorial, to be conducted by course instructors, for majority of its technical courses. No new material is to be taught during this tutorial hour. Rather, the purpose of this tutorial hour is for the instructors to conduct activities such as providing further clarifications on lecture or laboratory material; solve additional example problems; or answer any questions the students may have with regards to the course or the laboratory work. This measure was taken in order to address two important goals:

1. To enable our students to do better in their course work.
2. It is a measure that would make us compliant with new Canadian Engineering Accreditation Board (CEAB) requirements for engineering programs accreditation.

We plan to implement this measure starting Summer 2010.

schd for
offering ↑

350 }
380 }
383 }
429 }

had already
scheduled
11 Mar 10