General Information

Bachelor of Engineering <u>and Bachelor of Software Engineering Academic Regulations</u>

Bachelor of Science <u>Academic Regulations</u>

<u>**Inter-department Program (BSENG) Requirements**</u>

Department of Computer Science

Department of Electrical and Computer Engineering

Department of Mechanical Engineering

General Information

Degrees and Programs Offered

The Faculty of Engineering offers the following degree options:
BEng in Electrical Engineering
BEng in Computer Engineering
BEng in Mechanical Engineering
<u>BSENG in Software Engineering*</u>
BSc in Computer Science
Software Engineering is <u>also</u> available as a BEng specialization in Computer Engineering or as a BSc option <u>or emphasis</u> in Computer Science.

Admission requirements and regulations for the BEng <u>and BSENG</u> degree programs are described below. Admission requirements and regulations for the BSc degree programs are described on page 70.

The Co-operative Education Program is mandatory for all BEng <u>and BSENG</u> programs and for the BSc in Computer Science (Business Option) <u>and the Combined Major in Health Information Science and Computer Science</u> program<u>s</u>. <u>All students in these programs graduate with the Co-op designation on their academic documents.</u> Co-operative Education is optional for the other BSc programs <u>in Computer Science</u>. The Engineering Co-operative Education Program~~s~~ is ~~are~~ described on page 68<u>, the BSENG Co-operative Education Program is described on page XX and t</u>he Computer Science Co-operative Education Program is described on page 75.

*The offering of this program is subject to the approval of the Ministry of Advanced Education. It is anticipated that this will be granted in time to accept students into both the first and second years of this program in September 2003.

Faculty of Engineering Programs

	Bachelor of Software Engineering	Bachelor of Engineering	Bachelor of Science Program			Bachelor of Arts Program		
			Honours	Major	General[2]	Honours	Major	General[2]
Department of Electrical and Computer Engineering	*[3]	*						
Department of Mechanical Engineering		*						
Department of Computer Science[1]	*[3]		*	*	*			*

1) Students wishing to complete one of the combined degrees in Computer Science and Mathematics, Computer Science and Statistics or Computer Science and Physics offered jointly by the Department of Computer Science and departments in the Faculty of Science will normally register in the Faculty of Science for their first year. Students wishing to complete a combined major degree in Health Information Science and Computer Science will normally register in the Faculty of Human and Social Development. Students wishing to complete a combined major degree in Visual Arts and Computer Science will normally register in the Faculty of Fine Arts.

2) Students wishing to complete a General degree in Computer Science will normally register in the faculty offering the second specialization area for their General degree in their first year.

3) The BSENG degree is offered jointly by the Department of Computer Science and the Department of Electrical and Computer Engineering.

Availability of Courses to Students in Other Faculties

Computer Science (CSC) and Software Engineering (SENG) courses are open to all UVic students.

Students who have not been admitted to the BEng or BSENG Programs in the Faculty of Engineering must obtain written permission from the Dean in order to register in Engineering (ENGR), Computer Engineering (CENG), Electrical Engineering (ELEC) or Mechanical Engineering (MECH) courses. Students not registered in an approved Faculty Minor will normally not be allowed to complete more than 6 units of such courses.

Visiting students within the Faculty of Engineering will be designated as having "non-

degree program" status. Students with this status may take only a pre-approved set of specified courses. In certain cases, other students may be registered as non-degree students to provide them with an opportunity to establish their qualification for entry or re-entry into a degree program offered by the Faculty.

Students pursuing a non-Engineering degree may elect to take a Mechanical Systems Minor consisting of 9 units of Mechanical Engineering, 4.5 units of which should be at the 300 level or above. Such Minors should be developed in consultation with the Department of Mechanical Engineering and approved by the Dean of the originating faculty of the student. Permission to register in courses and related prerequisites will be considered on a case-by-case basis and is at the discretion of the department. Students must declare the Minor with the advising centre of their originating faculty.

Limitation of Enrollment

Enrollment in any course or degree program may be limited by the availability of staff and resources. Applicants who meet the minimum academic requirements are not guaranteed admission to any program.

Enrollment in SENG 265 and all 300/400 level SENG courses will be limited by requiring a minimum grade of B- in CSC 115, 225, 230, and SENG 265 whenever they are explicit prerequisite for those courses. These restrictions do not apply to BEng students.

Bachelor of Engineering and Bachelor of Software Engineering Academic Regulations

Program Admissions

Application forms for undergraduate admission to the BEng and BSENG degree programs are available from Undergraduate Admissions and Records Services

Completed applications must be submitted to Undergraduate Admissions and Records Services by ~~May 31 for admission in September 2002. Effective for the September 2003 admissions period, the application deadline is~~ April 30 and the documentation deadline is May 31. Applicants will receive written acknowledgement that their application for admission to the BEng or BSENG degree program has been received by Undergraduate Admissions and Records Services and confirmation that their admission file is complete.

Students admitted to the BEng or BSENG degree program normally begin first-year Engineering courses in the September-December term each year.

International Students

The University has a primary obligation to permanent residents of Canada. Nevertheless, a limited number of international students may be admitted to the BEng and BSENG degree programs.

Admission Requirements

Graduates of BC Secondary Schools

Requirements for admission to the BEng and BSENG degree program for graduates of BC Secondary Schools are presented on page 12.

Graduates from Canadian Secondary Schools Outside BC

Graduates of senior secondary schools in Canadian provinces other than British Columbia require equivalent qualifications in Mathematics, Physics and Chemistry equivalent to those specified as admission requirements for BC secondary school graduates (see page 12). Applicants are advised to contact Undergraduate Admissions and Records Services for further information regarding requirements.

Transfer Applicants

Applicants Transferring from First-Year Science

Applicants who have completed first-year Science at a university or college are eligible to be considered for admission. Applicants will be evaluated on a course-by-course and student-by-student basis. Applicants in this category should normally have taken at least 12 units of courses which transfer to the University of Victoria as CSC 110, MATH 100 and 101, PHYS 120 or 112, ENGL 115 or 135 or another first-year English course, and 4.5 units of other electives.

The following courses are recommended as electives: CSC 115, CHEM 101 and 102, MATH 233A and a technical writing course. Students admitted with less than 15 units of credit that are applicable to the program may be required to take courses during work term W2 (see Academic and Work Term Schedule) and complete this missing work term after term 4B a period when a work term is normally scheduled.

Applicants Transferring from a Two-Year Diploma Program

On successful completion of the appropriate six-month Engineering Bridge Program offered at Camosun College, students with two-year diplomas in Electronics or Mechanical Technology will be admitted to the third year of a BEng program while students with a two-year diploma in Computer Technology will be admitted to the third year of a BSENG program. (Offering of a BSENG Bridge Program is subject to approval by Camosun College and the Ministry of Advanced Education.) Acceptance into the Bridge and BEng or BSENG Programs is decided on an individual basis and must be obtained from the Faculty of Engineering before registration in any of the Bridge courses or senior-level courses will be approved.

Mature Applicants

A limited number of mature applicants who do not meet the minimum requirements (as set out on page 12) may be admitted if, in the judgment of the Faculty, they have obtained equivalent experience.

Credit for Courses Offered by Other Faculties or Institutions

The Faculty of Engineering may grant credit to applicants to the BEng or BSENG degree program for courses taken at UVic or at other post-secondary educational institutions. Credit will be considered only for courses that are equivalent to courses in the BEng or BSENG degree program and in which satisfactory performance has been achieved. For courses with prefixes CENG, ELEC, ENGR, MECH and SENG, detailed documentation supporting the credit request may be required; students should contact the BEng or BSENG Office for specific instructions before beginning studies in the Faculty. Credit for courses completed while outside the Faculty of Engineering will only be granted for courses in which a grade of C- or higher, or the equivalent, was awarded. For some courses a higher minimum grade may be required. The student must initiate all requests for course credit in the first term (four months) of registration in the BEng or BSENG program.

Approved Substitutions for Courses Taken at UVic

Substitutions may be permitted, on a course-by-course basis, for students transferring into the BEng and BSENG program, for the following Engineering courses when the substitute course is taken at the University of Victoria.

Substitutions for BEng and BSENG Program Courses

Engineering Course(s)	Substitute Course(s)
CSC 160	CSC 115

CHEM 150	CHEM 101 and 102
MATH 133	MATH 233A
PHYS 122	PHYS 120 <u>or</u>
~~PHYS 122~~	PHYS 112 with grade of C or better
PHYS 122 & 125	PHYS 112 with grade of B or better
ELEC 216	PHYS 216
ENGR 240	ENGL 225 or 240
STAT 254	STAT 260

Readmission to the BENG or BSENG Program

Students who have withdrawn voluntarily from the BEng <u>or BSENG</u> degree program<u>s</u> and later reapply for admission must do so by the prescribed deadlines and will be considered in competition with all other <u>applicants and in the context of space availability at the time of reapplication.</u>

<u>An application for readmission from a student who has been required to withdraw must be submitted by the prescribed deadlines. Readmission will not be granted for at least 12 months following the date of required withdrawal. It is expected that students in this category will register in a set of courses that demonstrate some improved level of technical competence. As a result of these studies, their academic standing must be evaluated as satisfactory or readmission will not be considered. Students who are required to withdraw are not permitted to take or retake any courses with prefixes of CENG, ELEC, ENGR, or MECH until such time as they are readmitted to a BEng or BSENG program. Meeting all of the above requirements does not guarantee readmission to the program since a reapplication will be considered in competition with all other applicants and in the context of space availability at the time of reapplication. A student who is required to withdraw and is then readmitted will be placed on Probation and must obtain a Satisfactory Standing at the next regular standing evaluation.</u>

<u>A student given Failed Standing for a second time in either the BEng or BSENG program will be required to permanently withdraw from the program.</u>

ACADEMIC REGULATIONS

Academic Terms and Academic Years

The academic schedule for the BEng <u>and BSENG</u> degree program<u>s</u> consists of eight academic terms (two per academic year) and <u>six</u> work/<u>other</u> terms.

The academic terms are scheduled from September to December, January to April, and May to August. The timetable for academic terms and work/other terms is shown below. Four of the six work/other terms are normally used to satisfy the cooperative education requirements of the particular degree program being completed by the student. The remaining two terms (8 months) may be used for other academic work (completion of: the Management Option; the Physics Option; or a Minor), gaining additional work experience, or any other activity the student wishes to pursue. Regardless of the student's other activities, at least two work terms (as defined by the students registered program) must be completed after the student completes term 3A. Please refer to the appropriate program entry for the course schedule for each academic term for specific programs. Furthermore, students may not begin the final 9 units of their program requirements until they have completed at least three work terms (as defined by the students registered program).

Any deviations from the academic schedule shown below require the written approval of the Dean of the Faculty.

Each student in a BEng or BSENG degree program will be assigned to a graduating class which at any point in time will determine the student's current academic term and/or work term for the purposes of other regulations.

Academic and Work/Other Term Schedule

Year	September-December	January-April	May-August
1	Academic Term 1A	Academic Term 1B	Work / Other Term
2	Academic Term 2A	Work / Other Term	Academic Term 2B
3	Work / Other Term	Academic Term 3A	Work / Other Term
4	Academic Term 3B	Work / Other Term	Academic Term 4A
5	Work / Other Term	Academic Term 4B	

Course Load and Program Completion Regulations

The BEng and BSENG programs are is designed to be completed on a full-time basis. The normal course load is:

- Academic term 1A: 7.5 units
- Academic terms 1B through 4B: 9.0 units

Students whose course load falls below four courses in any four-month academic term require written permission of the Dean to participate in the Co-op placement process during that term. Non-participation in the regular Co-op placement process does not relieve a student of the responsibility to complete at least five four work terms (as defined by the students registered program) in order to graduate from the program.

Program Change Requests

Students who have completed at least one term (two terms for first-year students) of full-time studies in the BEng or BSENG programs at UVic who wish to alter the prescribed program must file a Program Change Request form with their respective departmental office.

Program change requests, including requests for leaves of absence, will be forwarded to the Dean, who will either approve or deny them, based in part on input received from the department concerned. Students must submit their requests before actually dropping or adding courses. Although every effort will be made to detect problems during this review process, students are solely responsible for difficulties resulting from prerequisite and timetable conflicts.

If program changes result in time away from the program, readmission to the program will depend on space being available at the time of re-entry and the student's academic status at the time of the readmission request. Approval of a leave of absence does not guarantee the absence of timetable conflicts upon the student's re-registration into the program. The period of the leave of absence will not be included in the overall time for degree completion; however, the Faculty reserves the right to require that relevant course work be repeated if deemed necessary by the Dean and the department concerned.

Maximum Time for Degree Completion

Students not completing their programs within the specified time limits must have their program extension approved by the Dean. The starting month in determining the length of a student's program is the first month in which courses are taken in the BEng or BSENG programs at UVic.

Year of Entry into the BEng or BSENG Program	1	2	3
Normal Time to Complete (months)	56	44	28-36
Maximum Time to Complete (months)	80	68	48

In exceptional circumstances, a student may undertake programs not bound by the above regulations. Such programs must be approved by the Dean before the student begins studies in the Faculty of Engineering.

Academic Performance

Grading

The grading system used for the BEng and BSENG degree programs is the same as that specified by the University (see page 24), with the following exceptions:

- A grade of D in a course implies a weak but marginally acceptable performance. While a D is a passing grade, an accumulation of D grades is an indication of overall weakness in a student's performance.

- A student may accumulate no more than <u>12 units of</u> ~~eight~~ uncleared D grades in the BEng <u>or BSENG</u> program to be eligible to graduate.
- It is Faculty policy to award the grade of E to students in an CENG, ELEC, ENGR, MECH or SENG prefixed course if they fail the course with a mark of 35% or higher and have written the final examination and passed the lab (if present).
- The grade DEF is used for courses in which a deferred examination has been granted on the basis of illness, family affliction or other similar circumstances (see Deferred Exams, below).

Review of an Assigned Grade in ~~Engineering~~ <u>BEng and BSENG Program</u> Courses<u>,</u> ~~and~~ Work Terms<u>, and Work Term Modules (see BSENG, page xxx)</u>

- Any request for a review of a final grade must normally reach the Dean's office within 21 days after the release of assigned grades.
- The review of a final grade is restricted to grade components contributed by a final examination and to any other grade components released to the student within the last 21 days before the end of classes.
- In the case of a work term <u>or work term module evaluation,</u> the review will be restricted to the component on which a failing grade was assigned.
- The grade determined by means of a review will be recorded as the final official grade, regardless of whether it is identical to or higher or lower than the original grade.
- Before requesting a review, students should make every reasonable effort to discuss the assigned grade with the instructor. Mathematical marking errors will be rectified without recourse to the review procedures.

Reviews of Academic Performance

The standing of students in the BEng and BSENG programs is determined by their sessional grade point average as described below. The sessional grade point average is based on all courses completed in a given winter or summer session which have a unit value. (See page 25). Courses bearing the grade of COM or DEF are not included in the calculation of the grade point average. Grades obtained in supplemental examinations will be treated as additional grades and are included in the term in which they are assigned and appear on the student's record (please refer to the section on Supplemental Examinations later in this section). Grades from the BEng Management Option will not be included in the graduation average. Grades for courses taken at outside institutions are not included in the GPA.

<u>BEng and BSENG</u> Standings

Satisfactory Standing

A student is in Satisfactory Standing if their sessional GPA is greater than or equal to 3.00.

Students with Satisfactory Standing may proceed in the program.

Probationary Standing

A student is in Probationary Standing if their sessional GPA is greater than or equal to 2.00 but less than 3.00.

Students with Probationary Standing must attain Satisfactory Standing in the next sessional GPA.

Failed Standing

A student is in Failed Standing if their sessional GPA is less than 2.00 or if the student is currently in Probationary Standing and their next sessional GPA is less than 3.00.

Students with Failed Standing in the BEng or BSENG programs are required to withdraw from the program and will not be considered for re-admission for at least one year. Please refer to the "Readmission to the BEng or BSENG Programs" section in this calendar entry.

Students with Failed Standing in the BEng or BSENG programs who also have University Failed Standing are required to withdraw from UVic and will not be considered for readmission for at least one year.

Course Equivalents and Course Withdrawals

Approval may be given, at the discretion of the Dean, for a student to replace one or more BEng or BSENG degree program courses with other acceptable courses. Written approval must be obtained in advance. Normally, such replacement courses will be taken at UVic.

A D or failing grade in any course may be cleared by passing (with a grade of C or better) the same or another acceptable course, subject to the written approval of the Dean of Engineering.

Students will not be permitted to withdraw from a given course more than once.

Examinations

Deferred Examinations

- Where a student has been unable to write an examination owing to illness, family

crisis or other similar circumstances, the Faculty may authorize a deferred examination.

- For the purpose of providing evidence to the Faculty as to the nature of illness and its effect on the student's ability to write an examination, the physician's medical report should be made on a form provided by the Faculty of Engineering, where possible. If this form is not used, the medical report should contain the information required by the Faculty of Engineering.
- Deferred exams will normally be written at the start of the student's next academic term; that is, approximately four months following the deferral of the exam.

Supplemental Examinations

- Supplemental examination privileges in BEng or BSENG degree courses are granted to students who are not in Failed standing in the program at the end of the session in which the course (for which a supplemental is requested) was taken. For first-year students, the standing is based on their entire first year (terms 1A and 1B) and requests are only processed in April and May. (Note: Because the University does not determine a new standing for students at the end of December, the Faculty will determine a 'December standing' for those upper year students requesting a supplemental exam based on courses taken from September to December. This 'standing' will be used to determine if the student qualifies for the supplemental privilege at that time.)
- The number of such examinations may not exceed the lesser of two or one-third of the courses (excluding those graded COM/F/N) taken by the student since their last formal standing review.
- Students may apply to write a supplemental examination in a course only if they have written a final examination and have received a final grade of E in the course.
- The grade received on a supplemental examination will replace only the grades of examinations and quizzes, and will not compensate for or replace laboratory, project and assignment grades. Any passing grade obtained on a supplemental examination will be shown on the student's academic record with a grade point value of 1, corresponding to a D, and will be taken into account in determining the student's graduating average and standing at graduation but it will not affect the students sessional grade point average. A student who fails to pass a specific course after a supplemental examination must repeat the course or replace it with an alternative course approved by the Dean of Engineering.
- Applications for supplemental examinations, accompanied by the necessary fees, must be received by the Dean's Office by the following dates:
  - for courses taken in terms 1A and/or 1B: June 30
  - for other courses taken during the September-December term: February 28
  - for courses taken during the January-April term: June 30
  - for courses taken during the May-August term: October 30

- Students will normally be notified of whether their application has been accepted

or refused within about three weeks of the appropriate application deadline. Fee payments for rejected applications will be returned.

- Supplemental examinations are scheduled by the Faculty.

Graduation Requirements

Students must meet the following requirements in order to be eligible for graduation:
1. Successful completion of the full set of courses specified for the degree program.
2. Successful completion of four ~~five~~ work terms (as defined by the students registered program) as specified below.
3. To have a graduating average of at least 3.0 and to currently be in Satisfactory standing.
4. No more than 12.0 units of uncleared D grades in the BEng or BSENG Program on their academic record.

Students who obtain a GPA of at least 7.00 over the last two years of their program and who have no failing grades and not more than 3.0 units of D grades over the last two years of their program will graduate with the BEng or BSENG degree "With Distinction."

Students who complete their graduation requirements "With Distinction" will be included in the Dean's Graduation List.

The graduating average of a student in the BEng or BSENG program will be the weighted average of the grade values (other than COM, N, F and E) assigned to 300- and 400-level courses taken or challenged at UVic and used within the student's degree program. Courses taken at the 500 level may be included in the graduating average if they are used to meet degree requirements. If the total unit value of such courses does not exceed 30 units, then all such courses will be included in the average. If the total exceeds 30 units, then the average will be taken on a maximum of 30 units of such courses, chosen so as to give the highest average, including, where necessary, the appropriate fraction of a course. A course that has been used to satisfy the requirements for one degree or in the calculation of the student's graduating average for one degree cannot be used for credit towards another degree.

BEng and BSENG Program Requirements

~~Requirements~~ Courses Common to ~~All~~ BEng and BSENG Programs (Engineering Core)

Students in all BEng and BSENG degree programs must complete the Engineering core courses listed below. Courses common to all BEng programs, but not required in the BSENG program, are also given in a second table. Additional requirements for each specific program are given under "Program Requirements" in the Departmental and BSENG Program entries.

Courses Common to all BEng and BSENG Programs

CHEM 150	Engineering Chemistry
CSC 110	Fundamentals of Programming: I
CSC 160	Fundamentals of Programming: II for Engineers
ELEC 199	Laboratory in Engineering Fundamentals
ENGL 115	University Writing
or ENGL 135	Reading and Writing Across Disciplines
ENGR 020	Work ~~Term~~ Preparation Workshop
ENGR 240	Technical Writing
ENGR 280	Engineering Economics
MATH 100	Calculus: I
MATH 101	Calculus: II
MATH 133	Matrix Algebra for Engineers
MECH 141	Engineering Fundamentals: I
PHYS 122	Mechanics for Engineers
PHYS 125	Fundamentals of Physics

1.5 units of approved electives from Humanities and Social Sciences*

* A current list of acceptable courses may be obtained from the BEng or BSENG Office.

Additional Courses Common to all BEng Programs

CSC 349A	Numerical Analysis: I
ELEC 216	Electricity and Magnetism
ELEC 250	Linear Circuits: I
ENGR 297	Technology and Society
ENGR 446	Technical Report
ENGR 498	Engineering Law
MATH 200	Calculus of Several Variables
MATH 201	Introduction to Differential Equations
STAT 254	Probability and Statistics for Engineers

Engineering Co-operative Education Programs

Students in the BSENG program should refer to the Inter-department Program (BSENG) Requirements section of this entry (page xx) to find the requirements for the Co-op component of that degree.

Co-operative Education is mandatory in the BEng degree program.

The general regulations found in the Co-operative Education Programs section of the calendar (see page 235) will normally apply to BEng degree program students. However, where the BEng regulations differ from the Co-operative Education regulations, the BEng regulations will apply.

~~Engineering~~ <u>BEng</u> Co-op Requirements

The Faculty will endeavor to inform <u>BEng</u> students who appear to be at risk of violating any of these requirements. Failure to do so, however, in no way obligates the Faculty to waive a requirement at a later date.

The BEng Co-operative Education Office is responsible for overseeing and evaluating work placements, ~~the evaluation of work term performance~~ and the assignment of the work term grade<u>s</u>.

Work Term Sequence

Work terms are normally of four months' duration (minimum 13 weeks) and alternate with academic terms. Normally, at least three of the required work terms must be separated from each other by at least one academic term. ~~A work term reduction based on course work (see Work Term Credits/Reductions on this page) cannot be used to satisfy the requirement of having at least three distinct work term intervals.~~ Furthermore, students may not begin the final six courses of their program requirements before they have completed at least three work terms and submitted the ENGR 446 report.

It is up to students to ensure that they follow a program that meets this requirement. Failure to do so may result in a student being blocked from further course registration until compliance is demonstrated or may result in the student being required to complete extra academic terms beyond the basic requirement of the program.

Work Term Prerequisites

Students <u>normally</u> must have completed ENGR 020 (Work ~~Term~~ Preparation Workshop) before undertaking <u>their first work term but in all cases must complete it before taking the second work term</u>.

Students <u>normally</u> must also successfully complete the University English Requirement and ENGR 240 before undertaking <u>their first work term but in all cases must complete this requirement before their second work term</u>.

Work Term Credits/Reductions

Students must pass <u>four</u> ~~five~~ work terms in order to qualify for the BEng degree. There are, however, several clearly defined situations where this requirement may be reduced by one or at most two work terms. Please note that the total work term credits<u>/</u> ~~and/or~~ reductions that can be accumulated under this section is limited to a maximum of two. ~~A maximum of one work term reduction may be based on academic credits.~~

1. A student with extensive technical work experience may apply to challenge for credit one or two work terms.

2. A student with recognized co-op work terms from another certified post-secondary institution may apply for transfer credit (to a maximum of two) toward the <u>four</u> ~~five~~ required work terms if they have at least 12 units of academic credit which transfers from that institution towards the BEng degree. <u>Detailed documentation supporting the credit request may be required</u>.

3. ~~.A student in the program who completes a Minor, the Management Option, the Physics Option or an approved equivalent set of courses will be recognized as having completed equivalent work and will be granted a reduction of one of the five work terms.~~

4~~.~~ A student undertaking continuous co-op work experience longer than four months <u>must be registered in a separate work term for each 4 month period and may be granted credit for additional work terms provided the basic requirements for each individual work term are met. Additional work terms should incorporate increased responsibility. For any period of work beyond 4 months for which there are no additional registrations, the student will lose co-op status and full time standing at UVic</u>.

Students must apply in writing to the BEng ~~Office for all course-based reductions and to the Engineering~~ Co-op Office for challenges and transfer credits. Applications for categories (1) or (2) must have been made within the first four months of attendance in the BEng program at UVic. ~~Requests for reductions in (or credit toward) the required number of work terms for other reasons will be considered on a case-by-case basis~~.

Work Term Application and Registration

Students must submit the Work Term Application form before participating in a placement cycle. Once a student has submitted this form, the student is normally expected to complete the work term regardless of how many work terms have already been completed.

Students must register for each work term by completing a Work Term Registration form, which is provided by the BEng ~~Engineering~~ Co-op Office. This form is normally submitted when the student submits the Work Term Application form. Students must be registered for the entire duration of the work term placement and, once registered, are not permitted to withdraw from the placement without penalty of failure, unless specific written permission has been granted by the Dean. Where permission is granted, an entry of WNF (Withdraw No Fault) will be entered on the transcript.

Work Term Assessment

The work term performance of each student will be evaluated on the basis of the student's performance of assigned work term tasks, as indicated in the employer's evaluation of the student, a written work term report evaluated by a designated member of the Faculty of Engineering, and a log of the student's work activities in a form that conforms to the requirements for log books set out by the APEGBC. A grade of COM, F or N will be assigned; COM is the passing grade. An appeal of an F or N grade awarded

for a work term will only be considered if it is submitted within six months of completion of the work experience.

At he beginning of each work term, students will submit a Work Term Record Form outlining the expectations for the work term. At the end of each month of the work term, the student will submit a copy of their log book for that month. The original log book will be submitted at the end of the work term. Periodically, written reviews of the student's performance will be supplied by the employer and a final review must be submitted at the end of the work term.

Students are also required to submit a written report that conforms to the guidelines then in place, in the program, at the end of each work term. This report is part of the formal credit assessment done at the end of a work term and it must be evaluated as satisfactory in order to obtain credit for the work term.

Failure to pass a required work term will normally mean that the student must complete an additional work term to meet the graduation requirement.

Work Term Fees

The university assesses a registration fee for each work term attempted by the student while registered in one of its programs. A fee is also assessed for work term challenges but no fee is assessed for work term transfer credits. (See page 29.)

Status of Students on Work Terms

Students registered for work terms are considered to be enrolled in a full-time course of studies and may not take university-level credit courses without the permission of the Dean. Students who are not registered in academic terms or in work terms should make themselves aware of the implications of their lack of full-time status.

Work ~~Term~~ Preparation Workshop

The Faculty ~~Co-op Office~~ offers a one-hour per week, non-credit workshop from September to December in order to assist students in:

- preparing initial résumés and cover letters
- developing positive interview techniques
- skills assessment and analysis
- work term report preparation
- understanding national and international placement standards
- methods for developing independent co-op job contacts

All students are normally required to participate in this workshop in their 2A term (September-December). Students entering third year via the Bridge Program will normally complete this ~~do the co-op preparation~~ workshop in their first academic term

(January-April).

BEng <u>and BSENG</u> Management Option

The courses required for this option are offered from January to April and will normally be taken after term 3B. Enrollment in the Management Option is limited. Students must apply for admission before registering in any of its required courses. Students can apply to the BEng <u>or BSENG</u> Office once they are registered in term 2B.

The Management Option consists of the following courses:
  COM 220 Organizational Behaviour
  COM 240 Management Finance
  COM 250 Fundamentals of Marketing
  COM 270 Financial and Management Accounting for Specialists
  plus one of:
  ENT 402 Entrepreneurship and Small Business for the Non-Specialist
  IB 301 The International Environment of Business

All of the above courses must be completed with a passing grade and collectively must be completed with a grade point average of 2.00 or better.

Students who complete all requirements of a BEng <u>or BSENG</u> Program as well as all requirements of the Management Option will receive their BEng <u>or BSENG</u> degrees in the appropriate Engineering specialization. Their transcripts will bear the designation "Management Option."

Students who fail to complete the requirements of the Management Option or elect not to enroll in this option, but otherwise complete all requirements of an Engineering program will receive their BEng <u>or BSENG</u> degrees without this designation on their transcripts.

Courses in the Management Option are governed by the general University regulations and not by those pertaining to the BEng <u>or BSENG</u> programs. Courses taken in the Management Option will not be included in the Faculty standing review of students in the BEng <u>or BSENG</u> Programs. ~~Students failing to successfully complete the Management Option will be required to complete the normal Co-operative Education Program requirements for BEng students.~~

Minors

A student pursuing a degree in Electrical or Computer Engineering <u>or the BSENG degree</u> may elect to take a group of courses towards a Mechanical Systems Minor in addition to the normal program requirements. The student's transcript and certificate will bear the inscription "Mechanical Systems Minor" provided the student completes at least 9 units of course work in Mechanical Engineering. The courses should be taken at the 200 level or above, with at least 4.5 units at the 300 level or above. ~~Students~~

~~completing all courses for the Minor with a grade or C or better may apply to the BEng~~
~~Office for a reduction of one of the five required work terms for the program.~~

Students pursuing a BEng or BSENG degree who wish to pursue a Minor in another discipline outside their program area may do so with the approval of that department/Faculty. Students should consult the appropriate advising centre for the development and approval of the minor. Declaration of Minor forms can be obtained from the Faculty of Engineering. Access to courses outside the BEng or BSENG Program is at the minor department's discretion. Courses that fulfill requirements for a Minor cannot form part of the requirements for the BEng or BSENG degree and normally would be taken outside a student's primary academic unit.

Bachelor of Science Academic Regulations

This entry would be as in current Calendar except for any 2003-04 proposed changes.

Inter-department Program (BSENG) Requirements*

*The offering of this program is subject to the approval of the Ministry of Advanced Education. It is anticipated that this will be granted in time to accept students into both the first and second year of this program in September 2003.

Acting Program Director: Hausi A. Müller, MS, PhD (Rice), Professor

The BSENG (Bachelor of Software Engineering) degree is offered jointly by the Department of Computer Science and the Department of Electrical and Computer Engineering. The Software Engineering Program Board is responsible overseeing the quality and operation of the BSENG program. This board is chaired by the Associate Dean and has representation from both the Department of Computer Science and the Department of Electrical and Computer Engineering. The Program Director is responsible for the day-to-day leadership and administration of the program.

Academic Advice

Students wishing to obtain more information about the BSENG program should contact the Program Director. Students in the program may also find it helpful to discuss questions with the assigned faculty advisors in Computer Science and Electrical and Computer Engineering.

Program Requirements

First Year

Term 1A

CSC 110	Fundamentals of Programming: I	1.5
MATH 133	Matrix Algebra for Engineers	1.5
MATH 100	Calculus I	1.5
MECH 141	Engineering Fundamentals: I	1.5
PHYS 122	Mechanics for Engineers	1.5

Term 1B

CHEM 150	Engineering Chemistry	1.5
CSC 160	Fundamentals of Programming: II for Engineers	1.5
ELEC 199	Laboratory in Engineering Fundamentals	1.5
ENGL 115	University Writing	
or ENGL 135	Reading and Writing Across Disciplines	1.5
MATH 101	Calculus II	1.5
PHYS 125	Fundamentals of Physics	1.5

Second Year

Term 2A

CSC 230	Computer Architecture and Assembly Language	1.5
ENGR 240	Technical Writing	1.5
MATH 122	Logic and Foundations	1.5
ELEC 255	System Dynamics	1.5
SENG 221	Software Architecture and Development Methods	1.5
STAT 260	Introduction to Probability and Statistics: I	1.5

Term 2B

CSC 225	Algorithms and Data Structures: I	1.5
ELEC 310	Digital Signal Processing: I	1.5
ENGR 280	Engineering Economics	1.5
MATH 222	Discrete and Combinatorial Mathematics	1.5
SENG 265	Introduction to Software Engineering	1.5
SENG 310	Human Computer Interaction	1.5

Third Year

Term 3A

CSC 355	Digital Logic and Computer Organization	
or CENG 355	Microprocessor Systems	1.5
CSC 360	Introduction to Operating Systems	1.5
ELEC 360	Control Theory and Systems: I	1.5
SENG 321	Requirements Engineering and Formal Specification	1.5
ECON 205	Managerial Economics	1.5
Basic Science Elective	See entry below	1.5

Term 3B

CSC 320	Foundations of Computer Science		1.5
CSC 370	Database Systems		1.5
SENG 360	Security Engineering		1.5
SENG 371	Software Evolution		1.5
Basic Science Elective		See entry below	1.5
Complementary Studies Elective		See entry below	1.5

Fourth Year

The fourth year of the BSENG program includes five technical electives and one free elective. This allows each student to focus his or her studies into one or more areas of greatest interest. Students must choose the five technical electives from the BSENG core electives given in List A and List B below. To satisfy accreditation requirements, at least three of these courses must come from List A. The two remaining courses may be chosen from either of these lists. However, with written permission of the BSENG Program Director, most other courses with prefixes CSC, CENG and ELEC may also be used to satisfy this technical elective requirement. The sixth elective course may be selected at any level and from any Faculty, including the Faculty of Engineering, provided the student has the required prerequisites.

Term 4A

CSC 450	Computer Communications and Networks	
or CENG 460	Computer Communication Networks	1.5
SENG 440	Embedded Systems	1.5
Three electives from List A and/or List B		4.5
Free elective taken from any Faculty		1.5

Term 4B

CSC 460	Design and Analysis of Real-Time Systems	
or CENG 455	Real Time Computer Systems	1.5
SENG 401	Social and Professional Issues	1.5
SENG 426	Software Quality Engineering	1.5
SENG 499	Technical Project	1.5
Two electives from List A and/or List B		3.0

BSENG 4th Year Technical Electives

BSENG Electives List A

CENG 420	Artificial Intelligence
CENG 450	Computer Systems and Architecture
CSC 326	Algorithms and Data Structures: II
CSC 405	Computer Graphics
CSC 425	Analysis of Algorithms
CSC 454	Fault-tolerant Computing

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ELEC 426
  or MECH 430    Robotics
ELEC 485         Pattern Recognition
SENG 315         Information and Knowledge Management
SENG 410         Media Applications
  or CSC 461     Multimedia Systems
SENG 412         Ergonomics
SENG 450         Network-centric Computing
SENG 462         Distributed Systems and the Internet
  or CSC 462     Distributed Computing
SENG 499         Technical Project (to allow for two-term projects)
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BSENG Electives List B

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CSC 330          Programming Languages
CSC 435          Compiler Construction
CSC 446          Operations Research: Simulation
CSC 464          Concurrency
ELEC 456         Mobile Communications
SENG 422         Software Architecture
SENG 424         System Reliability
SENG 430         Object-Oriented Design
SENG 435         Computer Supported Collaborative Work
SENG 454         Component Based Software Engineering
SENG 470         Management of Software Development
SENG 472         Software Process
SENG 474         Data Mining
SENG 480         Topics in Software Engineering
SENG 490         Directed Studies
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Basic Science Electives:

Any two of the following courses are acceptable for use in satisfying the Basic Science elective requirement of the BSENG program. Depending on the first course taken, some additional courses may also be suitable for use to satisfy this requirement. Students should contact the BSENG office about the possible use of other courses.

ASTR 200A, ASTR 200B
BIOL 150A, BIOL 150B, BIOL 190A, BIOL 190B
BIOC 102
CHEM 102
EOS 110, EOS 120
MICR 200
PHYS 210, PHYS 216, PHYS 220

Complementary Studies Elective

This course must be chosen to meet the Complementary Studies requirements for accreditation. A current list of acceptable courses may be obtained from the BSENG Office. BSENG students wishing to use a course not on this list must obtain written approval through the BSENG office.

BSENG Co-op Requirements

Co-operative Education is mandatory in the BSENG degree program.

The general regulations found in the Co-operative Education Programs section of the calendar (see page 235) will normally apply to BSENG degree program. However, where these BSENG regulations differ from the Co-operative Education regulations, the BSENG regulations will apply.

BSENG Co-op Requirements

The Faculty will endeavor to inform students who appear to be at risk of violating any of these requirements. Failure to do so, however, in no way obligates the Faculty to waive a requirement at a later date.

The BSENG Co-operative Education Office is responsible for overseeing and evaluating work placements, and the assignment of the work term grades.

Work Term Module Definition and Sequence

Co-op work experience consists of a number of blocks of full time employment that will normally span four-month intervals and alternate with academic terms of similar length. However, work periods may, in exceptional circumstances, be as short as 1 month (four contiguous weeks at 35 hours per week) or as long as 16 months. No credit for work experience will be granted for periods with a single employer where the total time with that employer is less than 2 months.

A student undertaking an approved work placement must be registered in an appropriate set of Work Term Modules. A **Work Term Module** represents a one-month period of continuous employment and hence corresponds to one-fourth of a full work term. Each student must complete at least four work terms (16 Work Term Modules) in order to graduate in the BSENG program.

No more than one work term (four Work Term Modules, may be attempted after the student is within 9 units of completing all course requirements. It is up to students to ensure that they follow a program that meets this requirement. Failure to do so may result in a student being blocked from further course registration until compliance is demonstrated or may result in the student being required to complete extra academic terms beyond the basic requirement of the program.

Work Term Module Prerequisites

Students normally must have completed ENGR 020 (Work Preparation Workshop) before undertaking their first Work Term (first Work Term Module) but in all cases must complete it before starting their second work term (fifth Work Term Module).

Students normally must also successfully complete the University English Requirement and ENGR 240 before undertaking their first Work Term Module but in all cases must complete this requirement before starting their second work term (fifth Work Term Module).

Work Term Module Credits/Reductions

Students must obtain passing grades for an aggregate of four work terms (16 work term modules) in order to qualify for the BSENG degree. There are, however, several clearly defined situations where this requirement may be reduced by up to two work terms (8 work term modules). Please note that the total credits/reductions that can be accumulated under this section is limited to a maximum of 8 work term modules.

1. A student with extensive technical work experience may apply to challenge for credit up to 8 Work Term Modules.

2. A student with recognized co-op work terms from another certified post-secondary institution may apply for transfer credit for up to 8 Work Term Modules if they have at least 12 units of academic credit which transfers from that institution towards the BSENG degree. Detailed documentation supporting the credit request may be required.

Students must apply in writing to the BSENG Co-op Office for challenges and transfer credits. Applications must have been made within the first four months of attendance in the BSENG program at UVic.

Work Placement Application and Registration

Students must submit a Work Placement Application form before participating in a placement cycle. Once a student has submitted this form, the student is normally expected to complete the stipulated Work Term Modules regardless of how many of these Modules have already been completed.

Students must register for each work placement by completing a Work Term Module Registration form, which is provided by the BSENG Co-op Office. This form is normally submitted when the student submits the Work Placement Application form. Students must be registered for the entire duration of a work placement and, once registered, are not permitted to withdraw from the placement without penalty of failure, unless specific written permission has been granted by the Dean. Where permission is granted, an entry of WNF (Withdraw No Fault) will be entered on the transcript.

Work Term Assessment

An evaluation of the work term performance of each student will be done at stated intervals as given below. This assessment will be based on three inputs: the employer's evaluation of the student's performance with respect to assigned work tasks; a written work term report prepared by the student and evaluated by a designated member of the Faculty of Engineering; and a log of the student's work activities, in a form that conforms to the requirements for log books set out by the APEGBC. A grade of COM, F or N will be assigned; COM is the passing grade. An appeal of an F or N grade awarded for a work term will only be considered if it is submitted within six months of completion of the work experience.

The work performance of each student will be assessed during and at the end of each continuous block of employment, with the formal work term credit assessment occurring at the end of each four month aggregate of experience.

At the beginning of each new work placement, students will submit a Work Term Module Record Form outlining the expectations for each Work Term Module. At the end of each Work Term Module, the student will submit a copy of their log book for that time period. The original log book will be submitted at the end of four, eight, twelve and sixteen months of aggregated work experience. Employers will supply written reviews of the student's performance at the end of the fourth, eighth, twelfth and sixteenth Work Term Module and/or at the end of any continuous period of employment.

At the end of the fourth, eighth, twelfth and sixteenth Work Term Module, students are required to submit a written report that conforms to the guidelines then in place, in the program,. This report is part of the formal credit assessment done at the end of each work term (four-month aggregate of experience) and it must be evaluated as satisfactory in order to obtain credit for the previous set of four Work Term Modules.

Failure to pass one or more Work Term Modules which are part of any given work term evaluation will result in the student being required to complete one or more additional Work Term Modules to meet the graduation requirement.

Co-op Fees

The activities associated with career development and work placements are spread across all of the terms in the program. The Co-op fee associated with the BSENG program is assessed as one (1.0) fee unit for each term (four month period) in which the student is either registered in courses or in Work Term Modules. This fee is applied from the time the student begins their studies in the program until the point at which they graduate. The same fee will be assessed for a work experience challenge but no fee will be assessed for a transfer credit.

Status of Students on Work Placements

Students completing three or more Work Term Modules, in a 4-month term, are considered to be enrolled in a full-time course of studies and may not take university-

level credit courses without the permission of the Dean.

Registrations that involve fewer than three Work Term Modules in a non-academic term will result in the student losing their full time standing at UVic for that term unless the student is also registered in an appropriate number of units of course work during the same term.

Students who are not registered either in academic terms or in approved work experience activities should make themselves aware of the implications of their lack of full-time status at the University.

Work Preparation Workshop

The Faculty offers a one-hour per week, non-credit workshop in each semester of the Winter Session in order to assist students in:
- preparation of resumes and cover letters
- development of positive interview techniques
- skills assessment and analysis
- work term report preparation
- understanding national and international placement standards
- methods for developing independently co-op job contacts

All students are normally required to participate in this workshop in their 2A term (September-December). Students entering third year via the Bridge Program will normally complete this workshop in their first academic term (January-April).

Department of Computer Science

This entry would be as in current Calendar except for any 2003-04 proposed changes.

Department of Electrical and Computer Engineering

This entry would be as in current Calendar except for any 2003-04 proposed changes.

Department of Mechanical Engineering

This entry would be as in current Calendar except for any 2003-04 proposed changes.