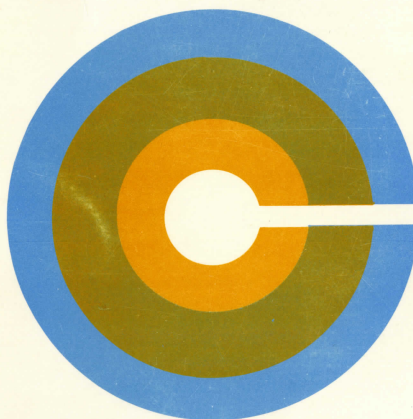




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**REPORT
on the
PROGRAM REVIEW
of the
COMPUTER SYSTEMS: OPERATIONS AND MANAGEMENT PROGRAM**



Cariboo College

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**REPORT
on the
PROGRAM REVIEW
of the
COMPUTER SYSTEMS: OPERATIONS AND MANAGEMENT PROGRAM**

PROGRAM REVIEW OFFICE

June, 1988

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SUMMARY

The CSOM program has established a high reputation in the local community and throughout B.C., resulting in graduates obtaining a job placement rating in excess of 90%. However, despite the success of the program, it suffers from a surprisingly low client interest, suggesting a need for aggressive marketing and promotion.

The principal recommendations of this report deal with the re-establishment of an Advisory Committee, the need for dedicated laboratory space, the formulation of a more equitable policy for the acquisition of software and hardware, the need for adequate funding for professional development, and the desirability of a co-op option for the program.

Some improvements also need to be made in the operation of the program: in the areas of clarification of program objectives, revision of service and computing courses and modification of admission standards.

Recommendations with college-wide implications deal with abuse of the MAIL facility and computer laboratory equipment, and with the need for the counselling department to promote its services more actively.

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THE PROGRAM EVALUATION COMMITTEE

(June 6 and 7, 1988)

COMMITTEE CHAIRPERSON

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Chairperson,
Sciences and Engineering

PROGRAM RESOURCE PERSON

Jack Mathews
Co-ordinator,
Computer Systems:
Operations and Management

PROGRAM REVIEW CO-ORDINATOR

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EXTERNAL REPRESENTATIVE

Rob Egan
Director,
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British Columbia Lottery Corp.

THIRD PARTY REPRESENTATIVE

Moe Granger
Instructor,
Chemistry

DATA ENTRY/CLERICAL SUPPORT

Arlee Strachan
Program Review Assistant

INTRODUCTION

The Program Review process was undertaken for the Computer Systems: Operations and Management Program over the period November, 1987, through May, 1988. Initial data were solicited from the Divisional Director, Business, Computing and Mathematics, in November, 1987. Questionnaires were mailed to employers and former students on February 18, 1988. Second mailings took place on March 18 and 21. Faculty surveys were distributed on February 23, and current student surveys were administered on March 9 and 11. The Program Evaluation Committee met to sift and deliberate the data on June 6 and 7, 1988.

BACKGROUND

The Computer Systems: Operations and Management Program at Cariboo College began in fall 1981 with 16 first year students and one full-time faculty member. The original curriculum had a heavy mathematics and management component, and relied totally on the mainframe computer (a PDP 11/40) for its computing courses. Over the years, the program content and course mix have been steadily adjusted to meet the continually changing needs of employers. Some of the original courses in CSOM were Quantitative Methods, Business Administration, Accounting, Business Management, Computer Centre Management, and Computer Professionalism. In 1983, prompted by the Advisory Committee and the realization that program graduates were more likely to become programmers than managers, the program's emphasis shifted to computing expertise, complemented by management, English and accounting skills.

Today, the program is taught using an equal mix of mainframe and microcomputer hardware and software. In the past two years, fourth generation technology has been added to a number of courses, and faculty are investigating further expansion into this field. CSOM computer courses have evolved from an essential languages and theory orientation to include Expert Systems Concepts, Computer Aided Software Engineering and Decision Support Systems. The CSOM faculty are committed to introducing new advances in business computing methodology as the need arises.

METHODOLOGY

A wide variety of methods and materials was used to conduct the review process.

Standardized questionnaires for program review were sent to Computer Systems: Operations and Management Program employers, faculty, graduates, and current students.

Richard Olesen, Director of Business, Computing, and Mathematics and Jack Mathews, Co-ordinator, Computer Systems: Operations and Management, provided historical and descriptive data on the program.

In addition, Jack Mathews provided a variety of materials in support of the review process:

Course outlines for the following:

ACCT 100	Introduction to Accounting for Non-Accountants
COMP 113	Introduction to Computing With PASCAL
COMP 157	COBOL
ENGL 155	Technical Writing
MATH 110	Finite Mathematics with Applications 1
COMP 123	Data Structures & Program Organization
COMP 166	Introduction to Knowledge Engineering
COMP 167	COBOL 2
MATH 120	Finite Mathematics with Applications 2
MNGT 252	Small Business Management
COMP 252	Business Programming in BASIC
COMP 253	Small Systems Hardware & Software 1
COMP 254	Computer Centre Management and Issues
COMP 256	Data Base Programming
COMP 257	Systems Analysis and Design 1
COMP 262	Business Applications Software
COMP 263	Small Systems Hardware and Software 2
COMP 264	Programming Languages
COMP 267	System Analysis and Design 2
ENGL 165	Technical Writing

Timetables for 1987/88

The Registrar's Office provided the following:

CSOM Admissions Package
Information on program application and admission statistics.

DISCUSSION

Questionnaire responses were sufficient to provide meaningful data in all constituencies except for former students. Faculty and current students elicited 100% response, and 78% response was received from employers. Unfortunately, only 14 of the 64 (22%) former students surveyed responded. Consequently, these responses were not felt to be meaningful statistically, although many of their comments were valuable. In the future, steps should be taken to keep closer track of graduates, perhaps through an alumni association, so that they can be readily contacted.

QUESTIONNAIRE DATA

The following trends were detected in the questionnaire responses:

Employer Survey:

- Employers commented favourably on the professionalism of the program graduates.
- They were generally very satisfied with the training and development skills of CSOM graduates, and commented favourably on the technical soundness of the CSOM preparation.
- They commented favourably on students' ability to become productive shortly after being hired.
- They expressed some concern about the communication skills (both oral and written) of CSOM graduates.
- They want students to have more systematic instruction in organizational skills and practice.
- They considered that all measured competencies in the program are crucial.
- They wanted a little more formal contact with the program and expressed a desire to contribute to the program content.
- They indicated a need for graduates with multi-access training and local area networking.

Faculty Survey:

- Faculty expressed concern at the lack of time and financial resources available for professional and curriculum development in a rapidly developing technological area.
- They were unsure about the efficiency of career counselling, competency testing, and learning and financial assistance.
- They expressed a need for improved facilities in the form of a dedicated CSOM lab, and for improved equipment, especially more powerful microcomputers.

- Service instructors expressed a desire for regular meetings with CSOM faculty.
- Workloads are normal in terms of contact hours, but because of student projects, the marking load is heavy.

Current Student Survey:

- First year students questioned the relevance of service courses in accounting, small business management and finite maths. However, by second year the relevance of these courses was more readily recognized.
- Accounting, Small Business Management, Finite Maths and Knowledge Engineering all came under fire to a greater or lesser extent. However, by second year, criticism of all but the Accounting course had disappeared.
- It is worth noting that levels of satisfaction of all aspects of the program increase significantly during second year.
- The responses generally indicated a high level of appreciation for the professionalism, knowledge, dedication, and instructional expertise of the faculty.
- Students commented positively on the support and assistance received from most program faculty.
- Students felt that the program prepared them well for a career in industry, and helped them with the development of professional attitudes.
- Students in second year found the system analysis and design project to be particularly valuable.
- Students indicated a lack of awareness about some services--career counselling, career centre, and financial and learning assistance.
- There is a perceived problem with counselling which could be remedied if students were directed to the program co-ordinator.
- There was strong concern expressed about the physical abuse of the computers and about abuse of the electronic MAIL facility by non-CSOM students.
- Concerns were expressed that not enough high level languages such as DBase III+ and C were in the program.
- A need was expressed for a dedicated microcomputer lab for CSOM.
- Concerns were expressed about work load distribution and about lack of time for recreation and athletics.

Former Student Survey:

Response levels from former students were insufficient to draw meaningful inferences. However,

- Accounting 100 still received heavy criticism from recent graduates, but less from earlier graduates;
- replies about writing and communication instruction were positive but indicated a desire for more;
- former students expressed an interest in C, networking and Lotus 1-2-3.

QUESTIONNAIRE DATA

(Computer Systems: Operations and Management)

The categories and quantities of responses are tabled below:

Recipient	# Sent	# Completed and # Returned	% Return
Employers	18	14	78%
Faculty	9	9	100%
Students: Current			
First Year	23	23	100%
Second Year	9	9	100%
Former*	64	14	22%
TOTAL	123	69	56%

*Former Students by Year

1983 intake	19	3	16%
1984 intake	23	4	18%
1985 intake	15	5	34%
1986 intake	7	2	29%

Returned by Post Office (all years)	14	22%
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As at May 20, 1988

ADMISSIONS DATA AND PERFORMANCE STATISTICS

Admissions Requirements:

Admission requirements for the Computer Systems: Operations and Management Program are as follows:

1. Educational

- a) B.C. Grade 12 or equivalent with C+ average
- b) B.C. Algebra 12 or equivalent, minimum B grade
- c) B.C. English 12 or equivalent with C+ minimum grade; or 26/60 on composition section of Language Proficiency Index; or completion of English 020.

2. General

- a) Canadian Citizenship or Landed Immigrant Status
- b) Orientation session with Program Co-ordinator
- c) Submission of CSOM questionnaire.

Client interest in the program at this point does not justify a selective admissions approach; on the contrary, the faculty are considering lowering the Algebra 12 requirement from a B to a C+.

Program Capacity/Program Demand over past seven years:

<u>Year</u>	<u>#Applicants</u>	<u>Admissions</u>	<u>Graduates</u>
1982	150	26	
1983	unknown	31	
1984	38	31	14
1985	32	28	7*
1986	26	21	17
1987	30	32(2 repeaters)	10
1988	unknown	unknown	11

* Most of this class did not graduate because they left to work for B.C. Lottery Corp. when it opened.

Apart from the early years of the program, when minimal entrance requirements were in place, the program has not attracted as many applicants as a cutting-edge technology program might be expected to. This points to a need for increased marketing and promotion.

Gender ratio (male to female):

1983	19 Male 12 Female	2:1
1984	23 Male 8 Female	3:1
1985	23 Male 5 Female	5:1
1986	15 Male 6 Female	5:2
1987	22 Male 10 Female	2:1

National average:

71% Male	7:3
29% Female	

Attrition over past five years:

<u>Year</u>	<u>Actual #</u>	<u>Attrition %</u>
1982-84	16/30	53.3%
1983-85	24/31	77.4%
1984-86	11/28	39.3%
1985-87	18/28	64.3%
1986-88	10/21	47.6%

Even allowing for the fact that CSOM is a two-year diploma program, these figures are uncommonly high.

PLACEMENT DATA

Types of Employment:

The program prepares students for work as programmers, systems analysts, junior managers, computer centre managers, computer consultants, computer operators, computer salespersons, and computer instructors (college level).

Placement Mechanisms:

Placements are facilitated primarily through informal networking by the program co-ordinator and faculty, and through newspaper advertisements. Such is the reputation of the program that several companies and agencies return repeatedly for CSOM graduates.

Current Salaries:

The median starting salary for CSOM graduates is \$1,900 to \$2,200 per month. The very lowest salary reported by a CSOM graduate is \$1,450 per month; two former students are earning \$50,000 per year.

Job Opportunities Projection:

The Statistics Canada projection for job opportunities in systems analysis, computer programming and related occupations is a 7.6% increase between 1985 and 1992, or approximately 1% per year on a workforce of 60,000 or more. Another sign of healthy job prospects in this field is the fact that 95% of CSOM graduates are employed almost immediately, particularly if they are prepared to move East or to the Lower Mainland.

Further Education Opportunities:

Although CSOM is designed primarily as a careers program, some of its courses, such as Computing 113/123 (PASCAL) and Math 110/120 can be counted towards a university degree.

At the community level, CSOM faculty in conjunction with local Canadian Information Processing Society (CIPS) members are undertaking the development of refresher courses aimed at preparing candidates for the Certified Computer Programmer (CCP) examinations. The CCP is a North American qualification administered by a network of computer organizations, and requires a college diploma and five years experience before the exams can be taken.

STRENGTHS OF THE PROGRAM

The Program Evaluation Committee identified the following strengths in the Computer Systems: Operations and Management Program:

1. The program is comprehensive and demanding. Graduates are adaptable and able to become productive very quickly after being hired.
2. The program contains a good balance of computing courses and appropriate support courses.
3. The live project (COMP 257/267 - System Analysis and Design) is unique to this program, and is regarded as very valuable by both students and employers.
4. The round-the-clock access to computers is regarded by the students as very valuable, even though the program lacks its own dedicated computer laboratory.
5. The computing instructors are very caring and dedicated, and always prepared "to go the extra mile" to help students. Most have a good combination of business and academic experience.
6. The achievement level of the students is high. Two graduates have been awarded the Governor-General's Silver Medal in the last five years. No student has ever appealed a final grade, indicating that they recognize the fairness of the evaluation process.
7. The placement record of graduates is very good: 95% of graduates are placed in computing-related jobs.

AREAS WHICH CAN BE IMPROVED
(WITH RECOMMENDATIONS)

This section highlights areas of the Computer Systems: Operations and Management Program which the data suggest can be improved.

1. Program Objectives and Calendar Entry:

Although a recently produced publicity pamphlet describes the course objectives well, the current calendar entry could be improved, especially in identifying the target careers of CSOM graduates. Despite marketing efforts directed towards the average grade 12 student in the Kamloops schools, few local high school students enter the program directly. This could be an indication that the title "CSOM" sends out conflicting and confusing signals as to what the program is about. The fact that there is no indication that any of the program courses carry university transferability may also makes it less attractive to potential students. Accordingly, the Committee recommends

- a) that the program objectives be rewritten to reflect the target career of CSOM graduates as junior programming with an emphasis on problem solving, and that the calendar list the types of careers available to CSOM graduates;
- b) that the program description in the calendar be rewritten as per the current publicity pamphlet;
- c) that the department explore the advisability of a name change to reflect more accurately the program focus;
- d) that the calendar entry for the program list the courses that have university transfer status, eg. COMP 113, COMP 123, MATH 110, MATH 120;
- e) that the program co-ordinator actively pursue university transfer credit status for other courses in the CSOM program.

2. Curriculum

a) Service Courses

The data indicate that students fail to recognize the relevance and value of the service courses, and consequently pay less attention to some of them than appropriate. Integration of these courses with CSOM objectives and increasing their computer relatedness may overcome this difficulty. The CSOM program co-ordinator and other CSOM faculty should play a role in the development and approval of service courses. The response to the English courses is ambiguous: students are pleased with the instruction, but employers and graduates feel that more English preparation is needed. The Committee recommends that

- i) the content of ACCT 100 be revised to include an integrated computer accounting package as a vehicle to describe and illustrate accounting concepts; that there should be a joint accounting/CSOM committee to discuss the course, and that the course outline for ACCT 100 be approved jointly by the CSOM co-ordinator and the chairperson of Business Administration;
- ii) that the content of MATH 120 be revised to include appropriate computer software and statistical packages; that there should be a joint Mathematics/CSOM committee to discuss the course, and that the course outline for MATH 120 be approved jointly by the CSOM co-ordinator and the chairperson of Mathematics;
- iii) that the content of MNGT 252 be modified so as to incorporate Lotus 1-2-3 and that the organizational behaviour aspect of the course be increased; that the evaluation process be changed so that the final project constitutes a smaller proportion of the course mark; that there should be a joint Business Administration/CSOM committee to discuss the course, and that the course outline for MNGT 252 be approved jointly by the CSOM co-ordinator and the chairperson of Business Administration;
- iv) that ENGL 229 (Oral and Written Communications) be added to the program in the fourth semester. To accommodate this course, the program will have to be restructured by moving ENGL 165 to the second semester and either COMP 166 or MNGT 252 to the fourth semester;

- v) that ENGL 155 and/or ENGL 165 be modified to include the use of a micro-computer based text processing package.

b. Computing Courses:

Most of the computing courses were recognized as excellent and as preparing students well for the market-place. However, some concern was expressed about the content of COMP 166 (Knowledge Engineering) and about the paucity of other computer languages. (The department is responding to this concern by considering incorporation of C into COMP 253/263, but cannot hope to deal with all requests by conventional means). The Committee recommends

- i) that the department consider changing the name of COMP 166 to "Introduction to Knowledge Engineering and Fourth Generation Languages" to reflect course content more truly;
- ii) that the department consider incorporating a challenge exam for C and other computing languages.

c. Course Outlines:

The Committee noted a large variation in course outline format, which tends to detract from the harmony of the program offerings. Accordingly, it recommends

- i) that course outlines be standardized to include the following features:
 - course description
 - course objectives
 - pre-requisites
 - transferability (if applicable)
 - texts
 - evaluation mechanisms
 - course topics (and schedule if appropriate)
 - announcements, caveats, etc.
- ii) that course titles be made congruent with the calendar listings, especially in the cases of COMP 123, MATH 120 and COMP 256.

d) Cheating Policy:

Because opportunities for cheating abound in computer laboratories, computer security, privacy

and professionalism must be stressed in the CSOM program. However, the wording of the cheating policy in the course outlines may have an adverse impact on student morale. Accordingly, the Committee recommends

- i) that the CSOM faculty consider rewording the "cheating policy" in course outlines;
- ii) that the meaning of "software piracy" be spelled out and that the students be made aware of the consequences of such action.

e. Co-op Program

The faculty have been investigating this possibility of a co-op option for CSOM. This would be particularly appropriate because work semesters would lead to job placements. The program co-ordinator is considering two streams for CSOM, one co-op and the other conventional, with entry into the co-op option determined by marks. The federal government will cover 80% of co-op funding with the College covering remaining 20%, or \$30,000 per annum over the first four years. (Formula funding for co-op students is 1.3 per FTE.) The Committee recommends

that the department continue its investigations of the co-op option with a view to implementing it in the 1989/90 instructional year.

3. Admissions

Because the program has not been filled to capacity for several years, a selective admissions policy is unadvisable at this time. Moreover, the B grade admissions requirement in Algebra 12 is on a par with university entrance requirements for computing, and other colleges require at most a C+ for entry into CSOM equivalent programs. As well, it may be advantageous to encourage the completion of college level academic courses prior to entering CSOM. Completion of a high school course in computing prior to entering the program is open to question, but some knowledge or experience of computing would be helpful; also, information on whether students have a computing background knowledge would be useful to the CSOM co-ordinator. Therefore, the Committee recommends

- a) that the Algebra 12 pre-requisite grade be dropped to C+;
- b) that the department consider a three-year CSOM option, consisting of one year of academic courses and two years of CSOM courses, especially for applicants who do not fully meet entry qualifications.
- c) that the CSOM admissions package questionnaire ask whether the candidate has taken any computing courses, and if not, suggest the advisability of doing so prior to entering CSOM.

4. Attrition

Given the very high rate of attrition in the program, the Committee recommends that

the program faculty implement all or some of the following mechanisms to combat attrition:

monitoring of student progress;
 "flagging";
 faculty advising;
 improved record keeping to track students at all stages of the program;
 exit interviews.

5. Faculty

A perception exists among CSOM faculty that service departments do not always provide the best or the most suitable instructors to teach service courses; conversely, service course instructors frequently feel excluded. Accordingly, the Committee recommends

- a) that the departmental chairpersons, and if necessary Divisional Directors, ensure that appropriate instructors are assigned to service courses in the CSOM program.
- b) that regular monthly meetings of all CSOM program instructors be scheduled to exchange information, co-ordinate courses, stagger student assignment load, and discuss student progress and exam results.

6. Facilities

a) Dedicated Laboratory

The current shared computing laboratory facilities are a source of frustration to both faculty and students. A dedicated facility would allow CSOM students to use advanced software--for example, CASE, DSS, data bases, and fourth generation tools; in addition, this would allow exposure to and experience of local area networking procedures, and raise the profile of the program. There is ample precedent for facilities dedicated to specific courses and programs (eg. CAD, DAD, Biology, Chemistry, AHT laboratories). Accordingly, the Committee recommends

that CSOM be allocated a limited access laboratory with six computers initially (IBM PS/2 Model 60's or 80's or equivalent), program-relevant software, and local area network capacity. This laboratory would include a state of the art printer(s), advanced graphics capability (including at least one colour screen), and Mouse hardware and software.

b. Classrooms

The Committee recommends

that the B Block second floor classrooms have electronic access to the mainframe computer such that computer images can be projected on overhead T.V. monitors.

c. Computer Laboratories

CSOM students expressed considerable frustration at being denied access to the computing laboratories when these were being used by classes that did not require hardware. Accordingly, the Committee recommends

that the departmental chairpersons and the Director of Business, Computing and Mathematics ensure that, in order to provide open laboratory time, classes not requiring the use of a computer not be taught in computer laboratories.

7. Equipment

Frequently, the choice of hardware is determined by the Division of Information and Facilities Services, rather than by the requirements of the program. Faculty also reported that they are not able to run the software packages required for their courses on the hardware available in their offices. Therefore, the Committee recommends

- b) that decisions regarding hardware acquisition for the CSOM program be made jointly by CSOM faculty and the Director of Information and Facilities Services;
- b) that recognition be given to the need for CSOM instructors to have adequate hardware in their offices to run program software;
- c) that a MagnaByte II or equivalent be provided for overhead projection of computer screen images in every classroom used for computer instruction.

8. Budget

a) Professional Development

Since the need for professional development is paramount in the rapidly developing technological field of computing, the Committee recommends

that the College recognize that some areas of expertise (including Computing) require more professional development than others, and that a mechanism be put in place to address this problem.

b) Software

Given the dominance of the administrative function of computers at the College, some recognition must be given to the particular software needs of computer-using programs, and therefore capital allocation should be set aside for software purchases by CSOM (and Computing Science). Accordingly, the Committee recommends

that the Director of Business, Computing and Mathematics ensure that capital allocation be set aside for software purchases by CSOM, and that final decisions on software rest with CSOM faculty.

c) General

The Committee recommends

that the Director of the College Foundation investigate and pursue the possibilities of corporate support, endowments and private funding for laboratory facilities, hardware and software.

9. Advisory Committee

As the original Advisory Committee has long since disbanded, it would be appropriate to reactivate it at this time. The presence of such a committee would give the program a standing which would be useful for CIPS accreditation, for placement purposes, for the co-op option, and for overall image. The Advisory Committee could review some of the recommendations that have come out of this evaluation process. In the interests of liaison with the high schools, a person from the school district should be on the Advisory Committee. Therefore, the Program Evaluation Committee (PEC) recommends

- a) that an Advisory Committee for CSOM be put in place and that the program co-ordinator recommend nominations for this committee to the President;
- b) that the Advisory Committee include a computing teacher from one of the local schools;
- c) that some of the specific comments and suggestions emerging from this review process be put on the agenda for the first Advisory Committee meeting;
- d) that the program co-ordinator and the Advisory Committee solicit more formal employer input on the program via regular questionnaires.

10. Alumni Association

It is clear from the poor former student response to the survey that more continuous and persuasive follow-up means are required for maintaining contact with CSOM graduates. The current students are in the process of forming an alumni association, and the department should encourage this activity. The Committee recommends

- a) that the program co-ordinator keep track of employers' and former students' addresses;

- b) that the program co-ordinator continue to encourage the formation of a CSOM alumni association which will provide the base for a better follow-up to future program questionnaires.

11. Articulation

The Committee recommends

that the program co-ordinator suggest to the British Columbia Computers and Education Committee (BCCEC) that it form a career computing sub-committee.

12. External Accreditation

Formerly, CIPS granted accreditation only to university computing programs, but recently accredited Seneca College, Ont., and has studied the CSOM programs at Cariboo and Red Deer colleges. The Committee recommends

that the CSOM faculty pursue the goal of meeting CIPS accreditation standards.

13. Awards

It was noted that there are no awards granted by the computing industry or by employers to CSOM graduates. Accordingly, the Committee recommends

that the Director of the College Foundation pursue the donation of awards for student achievement by computer supply companies and employers.

14. Marketing

As interest in the program is relatively low in Kamloops area high schools, CSOM must be more vigorously marketed. The Committee recommends

- a) that the program co-ordinator make regular high school visitations in the College region;
- b) that the program co-ordinator organize annual open days for high school teachers and counsellors so that they can view the facilities and meet the CSOM faculty;

- c) that marketing strategy utilize profiles of CSOM graduates, and that emphasis be given to the fact that CSOM has produced two Governor-General's Award winners in the past five years.

College Wide Issues

15. Computer and Mail Facility Abuse

Students took strong exception to the physical abuse that the computer terminals are receiving, and to the MAIL facility abuse. The latter particularly affects the performance of students in CSOM and other programs and is counter to good educational practice. The Committee accordingly recommends

that the Director of Information and Facilities Services investigate and implement methods of eliminating MAIL and computer laboratory equipment abuse.

16. Counselling Services

Certain areas of counselling services--career counselling, career centre, competency testing, and financial and learning assistance--were not clearly understood or known by students. Therefore, the Committee recommends

that these services be promoted more vigorously and advertised more extensively.

APPENDIX ACost Efficiency

1986/87 PACS Reports indicate that the cost per student contact hour for the Computing Science/Data Process category at Cariboo College was \$5.55, in contrast to a system mean of \$4.16--34% in excess of the system mean. While this figure pertains to Computing Sciences in general, and while specific data on the CSOM cost per S.C.H. cannot be extracted, nevertheless it is a relatively high figure. However, the high cost of Computing Sciences at Cariboo may be a reflection of the low faculty-student ratio, particularly, in CSOM where that figure is 1:20, as opposed to 1:30 or over in most other programs (see Appendix B).

DEC 17, 1987

ANALYSIS REPORTS
DETAIL BREAKDOWN OF INSTITUTION SUBMISSIONPAGE 10
REPORT ID : DR1.01

INSTITUTION : CARIBOO

FUNCTION : 01 INSTRUCTION
ACTIVITY : 110 CONVENTIONAL INSTRUCTION
MAJOR PROGRAM : 10 ACADEMIC/TECHNICAL

--SYSTEM MEAN--

CLUSTER DESCRIPTION	STAFF	% CHG	PERSONNEL	% CHG	OTHER	% CHG	GROSS	% CHG	STUDENT CT. HR.	SECTION	GRS \$/SCH	GRS \$/SECTN	GRS \$/SCH
1100 AGRICULTURE													
AE-86/87	3.2		137,040	1.5	33,993	4.6	171,033	2.1	19,974	22	8.56	7,774	8.32
AE-85/86	3.2	14.3	134,977	5.9	32,496	16.2	167,473	7.8	19,201	19	8.72	8,814	5.91
AE-84/85	2.8	36.4	127,407	32.4	27,973	11.3	155,380	29.3	26,694	27	5.82	5,754	6.27
AE-83/84	4.4		188,380		31,520		219,900		28,470	30	7.72	7,330	7.56
2100 ENGINEERING													
AE-86/87	2.6	52.9	122,157	62.5	19,108	+	141,265	66.9	37,037	23	3.81	6,141	6.57
AE-85/86	1.7	6.3	75,189	16.4	9,465	98.3	84,654	22.1	15,828	16	5.34	5,290	5.48
AE-84/85	1.6	14.3	64,581	13.7	4,772	46.3	69,353	15.5	17,639	15	3.93	4,623	5.10
AE-83/84	1.4		56,808		3,262		60,070		18,872	15	3.18	4,004	5.17
3100 MANAGERIAL													
AE-86/87	5.8	3.6	269,031	6.6	3,241	12.6	272,272	6.7	82,050	59	3.31	4,614	3.20
AE-85/86	5.6	17.6	252,386	9.5	2,879	1.3	255,265	9.4	88,831	63	2.87	4,051	2.97
AE-84/85	6.8	33.3	278,768	24.6	2,842	1.4	281,610	24.4	84,465	57	3.33	4,940	3.02
AE-83/84	10.2		369,536		2,882		372,418		78,834	72	4.72	5,172	3.23
3300 COMMUNICATION													
AE-86/87	2.0		85,944	15.9	10,803	28.8	96,747	12.6	27,710	19	3.49	5,091	4.25
AE-85/86	2.0	66.7	102,253	95.0	8,388	+	110,641	+	31,380	18	3.52	6,146	3.91
AE-84/85	1.2	20.0	52,428	5.3	2,557	6.5	54,985	4.8	15,549	12	3.53	4,582	3.88
AE-83/84	1.5		55,386		2,401		57,787		11,628	12	4.96	4,815	4.14
3500 COMPUTER SCIENCE/DATA PROCESS													
AE-86/87	5.4	3.6	246,950	1.5	5,225	11.5	252,175	1.3	45,404	38	5.55	6,636	4.16
AE-85/86	5.6		250,725	8.4	4,685	+	255,410	9.6	48,670	33	5.24	7,739	3.41
AE-84/85	5.6	15.2	231,280	13.8	1,833	60.3	233,113	14.6	54,950	37	4.24	6,300	3.23
AE-83/84	6.6		268,360		4,622		272,982		66,756	50	4.08	5,459	3.15
4100 LEGAL AND SOCIAL SERVICES													
AE-86/87	1.2	25.0	49,388	19.9	1,830	7.0	51,218	19.5	11,273	10	4.54	5,121	3.10
AE-85/86	1.6	50.0	61,665	52.4	1,967	23.8	63,632	51.8	10,550	17	6.03	3,743	2.68
AE-84/85	3.2	15.8	129,549	19.8	2,583	25.1	132,132	19.2	37,858	35	3.49	3,775	2.72
AE-83/84	3.8		161,519		2,065		163,584		34,508	27	4.74	6,058	3.12
4200 NURSING													
AE-86/87	13.8	5.5	576,077	3.5	10,477	31.8	586,554	4.2	137,297	15	4.27	39,103	6.17
AE-85/86	14.6	2.7	597,042	10.4	15,353	+	612,395	11.6	139,233	20	4.39	30,619	6.05

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