

## Computer Science Circle

Both as a department and as a University Circle, Computer Science has considered its roles and relationships within UBC-O and the new College. After much discussion about the various possibilities, we have come to the conclusion that UBC-O and the new College should each have separate Computer Science departments with separate visions.

For UBC-O, the tentative vision is *to produce future generations of computer scientists and researchers by providing excellent educational and research opportunities to the Southern Interior region.*

For the new College, the tentative vision is *to achieve excellence in Computer Science education by applying foundational principles to current and emerging computing environments.*

Both visions build on OUC's tradition of excellence in teaching, and then expand in directions, which reflect the UBCO and new College visions. These departmental visions drive the recommendations below.

- **UBCO should have a Computer Science department**, which will assume OUC's Bachelor of Science Major in Computer Science and its associated minors.
- **UBCO should offer an honours program in Computer Science.** This will be proposed by the Computer Science department at OUC and then will be assumed by UBCO.
- **UBCO should offer Master and Doctoral programs.** Since the introduction of graduate studies will require additional experience in graduate supervision and research, the implementation of this recommendation will be delayed until new UBCO faculty members are in place. The initial graduate students will be expected in approximately 2007-08.
- **The new College should have a Computer Science department**, which should assume OUC's Computer Information Systems (CIS) diploma and Bachelor of Computer Information Systems (BCIS) degree.

We recognise that having the degree at the new College may result in some duplication of upper-level courses between the two institutions as BSc and BCIS students may wish to take the same courses. As an alternative, some upper-level courses may be offered at UBCO and others at the new College, with students taking courses at both institutions.

- **The new College should offer a wide range of University Transfer (UT) courses**, taught by faculty who are employees of the new College, preferably based at the campus at which they are teaching. This range should be as wide as possible.

We recommend offering COSC 111 (Programming I), 121 (Programming II), and 122 (Computers and Society) at all four new College campuses. The first two courses are part of CIS and BCIS as well.

We recommend also offering COSC 211 (Machine Architecture), 221 (Introduction to Discrete Structures), 222 (Computer Data Structures), and 231 (Principles of Computer Science) at the Kalamalka and KLO campuses. They are core courses for second-year Computer Science and the Faculty of Science at OUC has expressed its intention of offering a full second year of Science courses at the Kalamalka campus. In addition, all these four 200-level courses are part of CIS and BCIS.

- **The new College should assume service courses to the Faculty of Engineering Technology, at the KLO campus.**

COSC 115 (Microcomputer Orientation) is taught to students in the Civil Engineering Technology diploma program.

COSC 115 and 127 (Computer Applications for Water Quality Technology) are taught to students in the Water Quality and Environmental Engineering Technology diploma program.

COSC 110 (Introduction to UNIX) is taught during the intersession period to students in the Network and Telecommunications Engineering Technology program, using a lab at NKC although the rest of the NTEN program is taught at KLO. When CIS is offered at the new College, a suitable lab will be available at KLO.

- **The new College should offer a degree in Computer Game Development.**

The OUC Computer Science department has begun developing such a program.

These recommendations support the vision of UBCO as a world-class teaching and research-intensive institution, while also meeting the needs of students for whom such an institution is inappropriate and supporting the community expectation of what a community college should provide.

Exploring the consequences of these recommendations leads to some immediate challenges in personnel, space, and equipment.

- Estimating faculty workloads leads to the conclusion that approximately  $\frac{2}{3}$  of the existing faculty will be required at the College and approximately  $\frac{1}{2}$  will be required at UBCO. Thus there is a need to hire new faculty.

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- Neither institution has departmental lab technicians to help support the labs, particularly the UNIX and Linux labs. While Computing Services maintains the PC labs, Computer Science department members currently maintain the UNIX and Linux labs. This practice cannot continue.
- Neither UBCO nor the new College has adequate permanent office or research space for its faculty members. Some department members now have their offices in portables, and others will be there in the future. Both UBCO and the new College must provide adequate space.
- UBCO will eventually have graduate students. There is no room (either office or laboratory) for these students.
- Neither UBCO nor the new College has room for the new labs or classrooms required to offer classes at reasonable hours of the day. While we would hope to accommodate community members by having some classes in the evening, the present restrictions for students result in very long days, leading to poor knowledge retention in the evening classes.
- There is the need for new labs and lab equipment at the new College. Salmon Arm, Vernon, and Penticton appear to have adequate PC labs at present, but the UNIX needs (see below) must be addressed. With CIS and BCIS at KLO, that campus will need labs similar to the present SCI 130 (costing approximately \$60,000) and SCI 234 (costing approximately \$130,000) and the UNIX needs must be addressed.
- UBCO and the new College will need replacements for the current UNIX server (at an approximate cost of \$35,000 each.) One of these replacements will be completed by 2004 September 1.