

November 22, 2017

Dr. Darlene Juschka, Chair  
Council Committee on Academic Mission

**Re: Academic Unit Review**

Dear Dr. Juschka:

Following the Academic Unit Review policy and in response to your letter dated October 17, 2017, please find attached the following two documents.

Report I. Itemized comments addressing the areas listed in your letter and taken from the Academic Unit Review Operations Manual (OPS-130-005).

Report II. Itemized response to the recommendations in the external reviewers' report.

With kind regards,

Malek Mouhoub  
Professor and Head  
Department of Computer Science

## **Report I**

### **Itemized Comments on Topics Listed in the Academic Unit**

#### **Review Manual (OPS-130-005)**

##### **The priorities and aspirations of each unit and the extent to which they are being realized**

The Department is committed to promote excellence in research and teaching and to follow the three strategic priorities at the University of Regina: Student Success, Research Impact and Commitment to our Communities. The Department aims to build a vibrant research and training environment for our undergraduate and graduate students. It encourages research collaboration both internally and externally, and conducting nationally and internationally recognized scholarship. To meet the future needs from the rapidly developing IT industry and the fast growing provincial/national economy, the Department has developed and will continue to develop innovative programs in collaboration with other faculties. In addition, the Department is making a special effort to strengthen its relationship with industry by developing collaborative projects and consulting on curriculum development.

##### **The challenges and opportunities faced by the unit**

Due to the increased demand from the IT industry in Saskatchewan and elsewhere, the Department has experienced considerable growth in enrolments since 2010. The total number of undergraduate students majoring in Computer Science has more than doubled in the past 6 years. In addition, the number of applications at the graduate level has significantly increased. In spite of this considerable increase at both levels, the faculty complement at the Department of Computer Science has declined over the past years and the Department's operating budget was cut by approximately \$40,000 in FY 2014.

##### **The structure and quality of undergraduate and graduate programs and instruction**

The Department offers five BSc undergraduate programs: BSc Major in Computer Science, BSc Honours in Computer Science, BSc Combined Major in Computer Science and Mathematics, BSc Honours Combined Major in Computer Science and Mathematics, and a BSc in Software System Development. In addition, there are two concentrations respectively with Business and Creative Technologies. The Department also offers a two year Certificate in Computer Science. A Post-Diploma B.Sc. in Computer Science is available to graduates from one of two specific programs available at Sask Polytechnic. A cooperative education option is available with all BSc programs.

At the graduate level, both the MSc and PhD degrees are offered. The MSc degree includes four options: thesis based, project based, co-op based, and course based. The Department offers an extensive set of graduate courses to introduce the students to the main department research areas. In addition, MSc students can take a limited number of 400-level advanced undergraduate courses towards their degrees.

The Department of Computer Science has an active curriculum committee which meets regularly, accepts suggestions and feedback from all the areas with the Department and beyond and makes curriculum recommendations to the Department. The BSc programs are accredited by the Computer

Science Accreditation Council (CSAC), an autonomous accreditation body established by the Canadian Information Processing Society (CIPS). CSAC accreditation was first introduced in 1980 and the Department is one of the fewest academic units in Canada to maintain its accreditation since its inception. This demonstrates that the programs offered by the Department are of comparable content and quality to similar Computer Science undergraduate degrees accredited by CIPS at other Canadian Universities.

### **The contribution of each program to related disciplines and fields of study**

Students are exposed to a variety of programming languages and paradigms, operating systems platforms and software design tools. In addition, co-op work-term jobs involve core computer science activities such as programming, testing, and debugging. These will help students to be better prepared for the industry sector.

At the graduate level, students are offered rich programs of study and a research environment involving interdepartmental, multi institutional and inter-institutional collaboration that has attracted researchers from all over the world.

The Department is seen as the Computer Science teaching resource for the entire University. The Department provides well-enrolled service courses for Science, Engineering and other faculties. This provides the Department with economies of scale as well as opportunities to provide non Computer Science students with exposure to Computer Science as a discipline.

### **The scope and significance of research being pursued**

The department of Computer Science has established research programs in three main areas, namely: Artificial Intelligence, Digital/Multi-Media and Software Engineering. The Department's research productivity and impact are outstanding as measured by the large number of publications in reputable venues, best paper awards, national and international awards and recognitions, and success in peer-reviewed funding including the recent outstanding NSERC Discovery Grant results.

### **The degree to which academic programs meet students' learning needs and goals**

As highlighted in the externals' review report, Section 2, students and graduates are very positive about their program and educational experience.

### **The characteristics of staffing complements**

The Department of Computer Science has a program coordinator and an administrative assistant. The Department uses the University's IT Support Centre to maintain software and hardware in the undergraduate labs. Servers are maintained by a Systems Administrator.

### **The degree to which the unit is meeting its internal and external service responsibilities**

As clearly stated in the externals' review report, Section 5, the department members are very active in their service to the institution, the scientific discipline and the community.

### **The role the unit plays in meeting the University's vision, mission, goals and priorities**

The Department is committed to promote excellence in research and teaching and to follow the three strategic priorities at the University of Regina: Student Success, Research Impact and Commitment to our Communities. The Department aims to build a vibrant research and training environment for our undergraduate and graduate students. It encourages research collaboration both internally and externally, and conducting nationally and internationally recognized scholarship.

### **The financial resources of the unit**

The operating budget requests correspond mainly to instructional services. The Department's budget was cut by approximately \$40,000 in FY2014. In contrast, the number of students has increased substantially in the past years. A detailed description of the Unit Budget is provided in Section 6 of the Self Study Report.

### **Indigenization in line with the University's Strategic plan**

The Department is currently considering several possibilities to contribute to this aspect. In particular, the Department is coordinating the teaching of two Computer Science courses at FNUC, namely: CS 100 and CS 110. In this regard, the Department is providing recommendations on the instructors that are hired for these courses and their related labs, as well as advices for the setting of the laboratory component for CS 110.

## Report II

### Response to the recommendations in the external reviewers' report

**Recommendation 1.** *“That the Faculty of Science considers increasing the allocated resources to the Department of Computer Science to be commensurate with the significant increase in enrollment, or in the absence of increased resources, the Faculty considers a mechanism for controlling the number of majors in Computer Science by, for example, requiring a higher minimum incoming admission average before guaranteeing that a student gets their first preference of a major at the time of admission.”*

**Recommendation 10.** *“That the Department of Computer Science be granted the permission to hire a tenure-track faculty member in the upcoming 2017 – 2018 hiring season.”*

**Recommendation 11.** *“That the Department’s operating budget be increased to reflect the level of activity and student enrollment in the Department.”*

**Response:** The Department of Computer Science has been granted the permission to hire a three-year term position in Cyber security. Despite the financial situation at the University of Regina, the Department’s operating budget has been increased by \$10,000 in FY 2017.

**Recommendation 2.** *“That the Department of Computer Science collaborates with the Faculty of Engineering and Applied Science to jointly offer the BAsC in Software Systems Engineering.”*

**Response:** The Department of Computer Science undergraduate programs are accredited by the Computer Science Accreditation Council (CSAC), an autonomous accreditation body established by the Canadian Information Processing Society (CIPS). The Department of Computer Science agrees in principle to offer a joint undergraduate degree with the Faculty of Engineering as long as the proposed program meets the eligibility requirements for CIPS accreditation.

**Recommendation 3.** *“That the Department of Computer Science starts offering the online Master’s of Health Information Management program.”*

**Response:** Due to lack of resources, the Department’s main priority is to focus on core Computer Science programs. The Department will offer the online Master’s of Health Information Management program when adequate resources are available.

**Recommendation 4.** *“That the prime space currently allocated to the CS and Math undergraduate clubs be reallocated to graduate student space of the Department of Computer Science.”*

**Recommendation 5.** *“That the Faculty of Science and the Department of Computer Science perform a space reallocation exercise to ensure that the allocation of research space is commensurate with current needs and graduate student enrollment in each research area.”*

**Response:** The Department is currently discussing with the Dean’s office the reallocation of research space.

**Recommendation 6.** *“That the Faculty of Science and the Department of Computer Science reconsider their decision to only offer a guarantee of one year of financial support for PhD students and devise longer term funding packages of a minimum of three years of support.”*

**Response:** Due the limited financial support at the graduate level, it is very challenging for the Department of Computer Science to offer guaranteed funding for more than a year.

**Recommendation 7.** *“That the Office of the Vice-President encourage and support the faculty members of the Department to prepare and submit applications to funding agencies such as NSERC and MITACS. In addition, it is recommended that the Faculty of Science takes a leading role in assisting the faculty members of the Department to establish research partnerships with private and public sector organizations.”*

**Response:** At the University of Regina, the Research Office provides the necessary assistance, guidance and review to faculty members when preparing their Tri-Council, national and international funding applications.

**Recommendation 8.** *“That the Department of Computer Science establish an Awards committee (or individual) whose responsibility is to nominate or arrange for nominations of faculty members for University, national, and international awards.”*

**Response:** Nominating faculty members for academic awards will be added as a responsibility to the Department of Computer Science Public Service Committee.

**Recommendation 9.** *“That the Faculty of Science and the Department of Computer Science explore establishing a policy for teaching load differentiation that takes into account the levels of graduate student supervision and administration of major research grants.”*

**Response:** Teaching load differentiation has been addressed in the new Faculty of Science Criteria document. In this regard, three academic profiles have been defined, namely: the balanced profile, the teaching-focused profile and the research-focused profile.