COMPUTER SCIENCE
UNDERGRADUATE PROGRAM
EVALUATION AND RENEWAL

Strategy 12: Program Redesign

Presenters: Rachel Pottinger (CS Associate Head of the Undergraduate Program) and Eugenie Lai (CS student)

Additional team members:
Alice Campbell (CS Science Education Specialist), Carrie Hunter (CTLT), Noa Heyl (CS student), Svetlana Sodol (CS student), Sarah Elhammade (CS student)
GOAL: RAISE THE DISCOURSE ABOUT OUR UNDERGRADUATE PROGRAM FROM THE COURSE LEVEL TO THE PROGRAM LEVEL

Awarded through UBC’s Undergraduate Program Evaluation and Renewal (UPER) Competition

Overall planned outputs:
• Course learning outcomes
• Current program learning outcomes
• Desired program learning outcomes
• Mapping from course learning outcomes to program learning outcomes
TWO APPROACHES: TOP DOWN AND BOTTOM UP

Top down:
• Led the department to create strawmen draft and desired Program Learning Outcomes.
• Clustered the strawmen Program Learning Outcomes, distilled them, and mapped them to the Course Learning Outcomes.

Bottom up:
• Helped faculty to create Course Learning Outcomes that adhere to best practice for all required courses and 75% of our courses overall.
• Interviewed a representative set of students from across our specializations.
• Visualized our prerequisite chain and course learning outcomes.
• Began working with our required course streams to create stream learning outcomes.
SNAPSHOT OF INTERACTIVE CURRICULUM VISUALIZATION TOOL

3rd year standing and any 3-credit CPSC courses

CPSC 313: Computer Hardware and Operating Systems

Course Learning Outcomes

1. Explain the benefits of, and challenges associated with, instruction-level parallelism and its implementation.

2. Describe at least one high-level architecture for a pipelined CPU. Correctly analyze examples of the timing of instructions passing through this architecture to identify dependencies and hazards.

3. Explain why different types of memory need to be used in modern computers, and how the constraints on physical size, capacity, and speed affect the performance of computer code. Correctly analyze examples of memory access patterns and locality to compute the steps required to retrieve the information and/or to update the memory state while maintaining optimal performance for future accesses.

4. Explain the issues that must be considered while designing file systems and some common solutions for these issues. Given a file system specification, correctly analyze examples of typical file system operations to identify how to retrieve necessary information or update the file system state. Explain the role that caching, buffering, and partial failure play in the implementation and use of file systems, including differentiating between the role that mechanism and policy play in the operating system and in applications that access file data.
CORE IMPACT SO FAR

Enhancing communication:
• Increased communication across streams.
• Improved communication with concerned students.
• Helped sessionals and lecturers prepare their courses.

From courses to curriculum:
• Identified two topics to improve across our curriculum: parallelism and collaboration.
• Prerequisite graph has highlighted problems with our prerequisite structure.
• Discovered some missing course learning outcomes.
MULTIDISCIPLINARY
UNDERGRADUATE RESEARCH
PROJECTS IN HEALTH (MURPH)
UBC - OKANAGAN

Strategy 8: Student Research

Presenter: Nicole Ketter, 4th year BSc student
Biology, Psychology (double major)

Supervisor: Brodie Sakakibara, PhD
Department of Occupational Science and Occupational Therapy
Centre for Chronic Disease Prevention and Management
OVERVIEW OF MURPH PROGRAM

Awarded through UBC’s Program for Undergraduate Research Experience (PURE) Competition

MURPH offers a unique cross-disciplinary platform to undergraduate students to engage in applied health research projects and receive professional training through various workshops.
VIRTUAL REALITY, DEPRESSIVE SYMPTOMS AND SEDENTARY BEHAVIOUR IN INPATIENT STROKE SURVIVORS: A PILOT RANDOMIZED CONTROLLED TRIAL

Research Summary

Primary Hypothesis: The protocol will demonstrate sufficient feasibility to support a subsequent multisite randomized control trial

Secondary Hypothesis: The VR intervention will significantly improve measures of depressive symptoms and sedentary behavior in stroke survivors receiving inpatient rehabilitation

Student Benefit

- Apply knowledge & utilize skills
- Mentorship
- Leadership
- Clinical experience

Dr. Sakakibara (Medicine)  
Ms. Jansons (Social Work)  
Nicole Ketter (Biology)  
Lydia Wood (Psychology)
INCLUSION, COLLABORATION AND INNOVATION

Increased research opportunities and diverse student backgrounds demonstrate inclusion

Multidisciplinary nature and peer learning demonstrate collaboration

Uniqueness of MURPH program and novel concepts in research teams demonstrate innovation