

## **APPENDIX 5**

### **EXAMPLES OF PROGRAM OUTCOMES FROM OTHER INSTITUTIONS**

#### **Example of Interdisciplinary PLOs based on the Council of Ministers of Education, Canada**

By the end of the program, students will be expected to:

1. Develop a knowledge base of theories and concepts within their primary area of study.
2. Use different approaches to solving problems using well established ideas and techniques within the discipline.
3. Locate and critically evaluate qualitative and quantitative information.
4. Formulate and communicate orally and in writing arguments based on information, theories, and concepts.
5. Apply knowledge and skills in a variety of contexts, including situations that are new to the student.
6. Conceptualize, design, and implement research for the generation of new knowledge or understanding within the discipline (Council of Ministers of Education, 2007).

#### **Bachelor of Arts in Philosophy**

The University of British Columbia (n.d.)

<http://philosophy.ubc.ca/undergraduate/learning-outcomes/>

After successfully completing a BA in Philosophy:

1. Students will be able to explain philosophical texts and positions accurately, to identify and apply philosophical research methods consistently, to articulate and defend precise philosophical positions, and to anticipate and rebut objections to those positions.
2. Students will be able to apply their philosophical learning to important public issues and to articulate why philosophical understanding is valuable in such debates.
3. Students will develop their own philosophical areas of interest and investigate them from various perspectives.
4. Students will attain the research skills necessary for writing a research paper that engages with primary and, where applicable, secondary literature on a topic in philosophy.
5. Students will learn to recognize and articulate fundamental questions about what exists, what we can know and how we should live our lives. Students will understand influential attempts to answer such questions, along with evaluating their advantages and disadvantages.
6. Students will acquire competence in translation, interpretation, and proof in sentential and predicate logic and will understand how these processes aid in the evaluation of arguments.
7. Students will be able to describe the ways in which the formal techniques of logic are important to philosophical research.
8. Students will acquire reading skills necessary to understand and critically engage with historical and contemporary philosophical texts.
9. Students will be able to identify some of the central concerns and methods of philosophy in at least two periods in its historical development and will be able to explain the relations between those eras of philosophy and contemporary philosophy. Students will be able to show sensitivity to issues of translation, textual transmission, and the historical and cultural context in which philosophical ideas develop.
10. Students will be aware of the existence of multiple philosophical traditions and will be able to reflect on the cultural specificity of some of their own concepts and values.
11. Students will be able to explain and discriminate between major approaches to moral philosophy such as consequentialism, deontology and virtue ethics, and to summarize and evaluate the views of at least one philosopher associated with each.

12. Students will be able to explain and discriminate between major approaches to political philosophy such as Libertarianism, Marxism, Liberalism and Communitarianism, and to summarize and evaluate the views of at least one philosopher associated with each.
13. Students will be able to explain epistemological concepts such as the nature of knowledge, justification, evidence and skepticism, and to summarize and evaluate major philosophical positions in relation to each.
14. Students will be able to explain metaphysical concepts such as necessity, reality, time, God and free will, and to summarize and evaluate major philosophical positions in relation to each.

### **Materials Engineering Degree from the University of British Columbia**

At the end of the program, students will be able to:

1. Characterize and select materials for design by evaluating the linkages between material properties, microstructures and processing.
2. Analyze materials engineering problems using a balance of mathematics, physics and chemistry including thermodynamics, mass, momentum and energy transport, kinetics and mechanics of materials.
3. Solve materials engineering problems. Identify and formulate problems, develop and apply analytical and experimental methods of investigation, identify contributing factors and generate, validate, and evaluate alternative solutions.
4. Design processes for the extraction, synthesis and processing of materials to meet technical, economic, environmental and ethical needs and constraints.
5. Communicate effectively in a professional environment through technical reports and presentations. Articulate and justify technical solutions to diverse audiences.
6. Recognize and evaluation the societal benefits of materials engineering. Appreciate and evaluate the environmental and societal impact of materials. Recognize the importance of professional and ethical responsibilities, the evolving nature of materials engineering and the importance of lifelong learning (University of British Columbia, n.d.).

### **Bachelor of Science in Biology, York University**

Upon successful completion of any program in Biology, students will be able to demonstrate:

1. General knowledge and understanding of the major concepts, methodologies and assumptions in biology.
2. General understanding of the basic structures and fundamental processes of life at the molecular, cellular, organismal and population levels, with detailed knowledge in certain topics.
3. The ability to gather, review, evaluate and interpret biology information (in scholarly reviews, primary sources and mass media articles).
4. The ability to apply learning from other areas (e.g. chemistry)
5. The ability to effectively apply the scientific method for problem solving and experimental design in biology.
6. The ability to carry out basic biological laboratory activities safely and reliably
7. The ability to collect, organize, analyze, interpret and present quantitative and qualitative biological data.
8. An understanding of the research methods in biology that enable the student to effectively evaluate the appropriateness of different established strategies/ techniques to solve problems, and to devise and to solve problems using these methods.
9. Awareness of current issues relating to biology (including one or more detailed areas within biology).
10. The ability to effectively work with others in the laboratory and class setting.

**Source : Extracted from Dyjur, P. , Grant, K., & Kalu, F. (2019). Curriculum review series # 3. Taylor Institute for Teaching and Learning. Calgary: University of Calgary.**