THE UNIVERSITY OF BRITISH COLUMBIA

Centre for Teaching and Learning

Okanagan Campus

Workshop on Developing Program Learning Outcomes:
Examples of Program Learning Outcomes

Business:
- Students will be able to work in groups and be part of an effective team.
- Students will be able to communicate business knowledge both orally and written.
- Students will be able to recognize and respond appropriately to an ethical and regulatory dilemma.
- Students will be able to recognize and diagnose accounting problems.
- Students will demonstrate disciplinary competence in a field of business.

Computer Science:
- Decompose a real-world problem into sub-problems that can be iteratively refined and solved individually, or in teams.
- Develop a software system to solve a real-world problem.
- Design, evaluate, validate, and justify a solution that adheres to given or derived requirements by: adapting from useful algorithms, data structures, and code from existing solutions; considering trade-offs in quality attributes (e.g., time, space, security); and applying best practices.
- Construct a formal argument and formulate logically-sound proofs, both to show correctness and prove the space and time complexity of an approach.
- Independently acquire knowledge of unfamiliar technologies, languages, frameworks, and architectures.
- Implement a program using modern team-based development practices.
- Identify the different layers of abstraction in a system and the interactions within the layers with respect to how data and execution are represented in that system.
- Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.
- Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
- Communicate effectively in a variety of professional contexts.
- Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
- Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
- Apply computer science theory and software development fundamentals to produce computing-based solutions.

Cultural Studies:
- Students will apply interdisciplinary perspectives to examine ways in which culture is formed, practiced and constituted.
- Describe and explain historical/cultural contexts within which diverse artistic traditions were created or emerged.
- Explain how various cultures contribute to the development of our multicultural world.
- Describe and explain how race, ethnicity, class, gender, religion, sexuality and other markers of social identity impact life experiences and social relations.
- Analyze and explain the deleterious impact and the privileges sustained by racism, sexism, ethnocentrism, classism, homophobia, religious intolerance or stereotyping on all sectors of society.
- Demonstrate linguistic and cultural proficiency in a language other than English.

Environmental Studies:
- Students will effectively communicate perspectives on complex environmental challenges to both professional and lay audiences.
- Integrate facts, concepts, and methods from multiple disciplines and apply to environmental problems
- Use quantitative reasoning, observation, technical and analytical skills for scientific problem-solving and interpretation of environmental data
- Design and evaluate strategies, technologies, and methods for assessment and sustainable management of environmental systems and for the remediation or restoration of degraded environments
- Characterize and analyze human impacts on the environment
- Use current laboratory and field instrumentation, computer applications and statistical techniques in the collection, organization, analysis and interpretation of data
- Describe and assess the status of terrestrial and aquatic sites
- Articulate the interconnected and interdisciplinary nature of environmental studies

Humanities and Fine Arts:
- Students will examine both the structure of the modern "musical" and its production methodology.
- Students will be able to demonstrate fluency with formal vocabulary, artistic techniques and procedures of two dimensional and three-dimensional art practice.
- Students will demonstrate in-depth knowledge of artistic periods used to interpret works of art, including the historical, social and philosophical contexts.
- Students will be able to critique and analyze works of art and visual objects.
- Students will interpret art works to establish a perspective on the subject matter and the meaning of their imagery (iconography).
- Students will be able to identify musical elements, take them down at dictation, and perform them at sight.
- Students will be able to communicate both orally and verbally about music of all genres and styles in a clear and articulate manner.

- Students will be able to perform a variety of memorized songs from a standard of at least two foreign languages.
- Students will be able to apply performance theory in the analysis and evaluation of performances and texts.
- Students will be able to analyze and interpret scripts.
- Students will demonstrate in-dept knowledge and understanding of contemporary theatre forms and artists.
- Students will be able to demonstrate proficiency in a variety of dance styles, including ballet, modern dance, jazz, and tap.
- Explain and reflect critically upon the human search for meaning and values within and across the human experience, as expressed in the arts, literatures, religions, philosophies, and/or thought traditions.
- Analyze, interpret and reflect critically upon creative expression, discourse, or thought traditions from diverse perspectives
- Describe and explain the historical and/or cultural context within which a body of work or thought tradition was created or emerged.
- Critically analyze how the humanities as disciplines of memory and imagination reflect upon the current conditions of the human experience and help envision progression as a society.

Indigenous Content:
- Identify the social, cultural, and demographic diversity of Indigenous peoples in Canada, the Americas, and globally;
- Describe the relationship between the land and Indigenous people's physical, psychological, and spiritual health;
- Illustrate an understanding about Indigenous language and its relationship to Indigenous Ecological Knowledge;
- Summarize the rights of Indigenous Peoples as expressed in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and the reasons it is a UN Declaration.
- Explain the effects of Canada's policies with regard to Canada's Indigenous Peoples resulting in past and recent Royal Commissions and the need for Reconciliation;
- Discuss and reflect on the meaning of "Indigenous";
- Reflect on contemporary urban Aboriginal issues and health concerns;
- Distinguish contemporary Indigenous arts expression; and,
- Apply the use of Indigenous systems-based inquiry tools.

Languages and Literature:
- Students will be able to apply critical terms and methodology in completing a literary analysis following the conventions of standard written English.
- Students will be able to locate, apply and cite effective secondary materials in their own texts.
- Students will be able to analyze and interpret texts within the contexts they are written.
- Students will be able to demonstrate oral competence with suitable accuracy in pronunciation, vocabulary, and language fluency in French.

- Students will be able to produce written work that is substantive, organized, and grammatically accurate in French.
- Students will be able to accurately read and translate French texts.

Mathematics:
- Students will be able to translate problems for treatment within a symbolic system.
- Students will be able to articulate the rules that govern a symbolic system.
- Students will be able apply algorithmic techniques to solve problems and obtain valid solutions. Students will be able to judge the reasonableness of obtained solutions.
- Represent, understand, and explain mathematical information symbolically, graphically, numerically, and with spoken or signed language.
- Develop mathematical models of real-world situations and explain the assumptions and limitations of those models.
- Use models to make predictions, draw conclusions, check whether the results are reasonable and find optimal results using technology when necessary and appropriate.
- Demonstrate an understanding of the nature of mathematical reasoning, including the ability to prove simple results and/or make statistical inferences.

Physical and Biological Sciences:
- Student will apply quantitative principles to effectively describe the nature of chemical reactions.
- Students will be able to demonstrate an understanding of core knowledge in biochemistry and molecular biology.
- Students will be able to apply critical thinking and analytical skills to solve scientific data sets.
- Students will be able to apply the scientific method to solve problems.
- Students will be able to demonstrate written, visual, and/or oral presentation skills to communicate scientific knowledge.
- Students will be able to acquire and synthesize scientific information from a variety of sources.
- Students will be able to apply techniques and instrumentation to solve problems.

Social Sciences:
- Students will be able to test hypotheses and draw correct inferences using quantitative analysis.
- Students will be able to evaluate theory and critique research within the discipline.
- Explain how social scientists conduct the systematic study of social relations, human experiences and patterns of change over time.
- Analyze and explain the multiple perspectives found in the social sciences that underlie debates on important historical and contemporary issues.
- Apply appropriate social scientific methods to collect data, analyze, evaluate, explain and/or solve problems in social relations and human behavior.
- Demonstrate an understanding of how social problems impact individuals, communities and societies.

Knowledge:
- Appraise the fundamental concepts, principles, theories, and terminology used in the main branches of science
- Assess health care needs of different groups in society apply disciplinary principles and practices to new or complex environments
- Explain how the scientific method can be used to obtain new data and advance knowledge.
- Demonstrate an understanding of the value systems and ethics associated with scientific inquiry.
- Demonstrate an understanding of the logical foundations, limits, and/or potential contributions of scientific endeavors in human society and everyday life.

Skills:
- Collaborate effectively within professional teams and interdisciplinary contexts
- Apply effective oral, written and visual communication skills to present a coherent and sustained argument to the public in a specialist area
- Demonstrate acceptable ethical standards in research and presentation of materials including proper verbal citations.
- Use investigative and analytical thinking skills to examine alternatives, explore complex questions and solve challenging problems.
- Evaluate the logic and validity of arguments, as well as the relevance of data and information.
- Use models to make predictions, draw conclusions, check whether the results are reasonable and find optimal results using technology when necessary and appropriate.
- Develop and clearly define their ideas through writing.
- Ethically integrate sources of various kinds into their writing.
- Compose texts through drafting, revising and completing a finished product.
- Express themselves through their writing by posing questions, making original claims and coherently structuring complex ideas.
- Revise their writing for greater cogency and clarity.
- Utilize adopted communication modes and documentation styles of specific disciplines (MLA, APA, Chicago, CBE, etc.) where appropriate.
- Determine the nature and extent of information needed.
- Demonstrate effective search strategies for finding information using a variety of sources and methods.
- Locate, retrieve and evaluate a variety of relevant information, including print and electronic formats.
- Organize and synthesize information in order to communicate effectively.
- Explain the legal and ethical dimensions of the use of information.

Application of Knowledge and Skills
- Contribute to contemporary artistic and cultural discourses by incorporating ethically aware and globally diverse perspectives
- Demonstrate adherence to professional and ethical frameworks in healthcare services and delivery
- Engage responsibly and sensitively with cultural, historical and interdisciplinary global contexts in the synthesis of ethical and sustainable design solutions
- Apply critical thinking skills when listening, reading, thinking and speaking.
- Create, organize and support ideas for various types of oral presentations.
- Evaluate contexts, attitudes, values and responses of different audiences.
- Identify, evaluate and apply different styles of presentation utilizing effective deliver techniques in public speaking.
- Identify and actively engage in behaviors conducive to individual health, well-being or development, and understand the value of maintaining these behaviors throughout their lifespan.
- Identify and apply strategies leading to health, well-being or development for community members of diverse populations.
- Apply the knowledge and skills of science and technology and evaluate how they impact individuals, the community and/or society.

Sources:
https://www.teaching.unsw.edu.au/examples-learning-outcomes
https://concordia.ab.ca/science/bachelor/environmental-science/environmental-science-learning-outcomes/
https://teaching.uwo.ca/curriculum/coursedesign/learning-outcomes.html
https://catalog.csun.edu/general-education/student-learning-outcomes/
www.bu.edu/provost/files/2017/06/Creating-Learning-Outcomes-Stanford.pdf
https://www.cs.ubc.ca/program-learning-outcomes
https://computerscience.missouristate.edu/undergraduate/Learning_Outcomes.htm

Other Resources:
UBC Okanagan Bachelor of Arts Program Learning Outcomes, Revised 2019

Contact Barbara Komlos, barbara.komlos@ubc.ca, with any questions regarding this workshop.