

Critical and Creative Thinking	Critical and creative thinking is a concept in which one applies logical principles, after much inquiry and analysis, to solve problems with a high degree of innovation, divergent thinking and risk taking. Those mastering this outcome show evidence of integrating knowledge and applying this knowledge across disciplinary boundaries. Depth and breadth of understanding of disciplines is essential to this outcome. At the graduate level, originality in the application of knowledge is expected.		
	University of Guelph Learning Outcomes and Associated Skills	B.Comp. CS Honours Degree Program Outcomes	B.Comp. General Degree Program Outcomes
	Independent Inquiry and Analysis	Analyze complex real-world problems. Devise efficient, well-documented computer-based solutions for those problems.	Analyze Examine complex real-world problems. Devise efficient, well-documented computer-based solutions for those problems.
	Problem Solving	Analyze a software development problem. Consider a range of possible approaches to its solution and identify the most promising approaches.	Analyze a software development problem. Consider a range of possible approaches to its solution and identify the most promising approaches.
	Creativity	Apply a knowledge of fundamental algorithms, programming techniques, and design to create software systems.	Apply a knowledge of fundamental algorithms, programming techniques, and design to create software systems.
	Depth and Breadth of Understanding	Design, correctly implement and document solutions to significant computational problems. Explain advanced, contemporary concepts related to software development.	Design, correctly implement, and document solutions to significant computational problems. Explain advanced, contemporary concepts related to software development.

Literacy	Literacy is the ability to extract information from a variety of resources, assess the quality and validity of the material, and use it to discover new knowledge. The comfort in using quantitative literacy also exists in this definition, as does using technology effectively and developing visual literacy.		
	University of Guelph Learning Outcomes and Associated Skills	B.Comp. CS Honours Degree Program Outcomes	B.Comp. General Degree Program Outcomes
	Information Literacy	Apply the core areas of software development. (data structures, theory of computation, operating systems, compilers, programming languages, computer architecture).	Apply the core areas of software development. (data structures, theory of computation, operating systems, compilers, programming languages, computer architecture).
	Quantitative Literacy	Apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems.	Apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems.
	Technological Literacy	Evaluate current techniques, hardware, software, and tools required for the production of software systems. Select the most appropriate tools for the task.	Evaluate current techniques, hardware, software, and tools required for the production of software systems. Select the most appropriate tools for the task.
	Visual Literacy	Understand the use and structure of the common mechanisms for formally describing software and hardware structures and graphical user interfaces.	Understand the use and structure of the common mechanisms for formally describing software and hardware structures and graphical user interfaces.

Global Understanding	Global understanding encompasses the knowledge of cultural similarities and differences, the context (historical, geographical, political and environmental) from which these arise, and how they are manifest in modern society. Global understanding is exercised as civic engagement, intercultural competence and the ability to understand an academic discipline outside of the domestic context.		
	University of Guelph Learning Outcomes and Associated Skills	B.Comp. CS Honours Degree Program Outcomes	B.Comp. General Degree Program Outcomes
	Global Understanding	Explain how technical constraints limit solutions desired by society in both local and global contexts.	Explain how technical constraints limit solutions desired by society in both local and global contexts.
	Sense of Historical Development	Summarize the evolution of communication and information technologies, the history of software and the evolution of computer technology.	Summarize the evolution of communication and information technologies, Discuss the history of software and the evolution of computer technology.
	Civic Knowledge and Engagement	Analyze the local and global impact of computing on individuals, organizations, and society.	Analyze Describe the local and global impact of computing on individuals, organizations, and society.
	Intercultural Competence	Recognize the social and cultural responsibilities of a professional working in the discipline of computer science.	Recognize Relate the social and cultural responsibilities of a professional working in the discipline of computer science.

Communication	Communication is the ability to interact effectively with a variety of individuals and groups, and convey information successfully in a variety of formats including oral and written communication. Communication also comprises attentiveness and listening, as well as reading comprehension. It includes the ability to communicate and synthesize information, arguments, and analyses accurately and reliably.		
	University of Guelph Learning Outcomes and Associated Skills	B.Comp. CS Honours Degree Program Outcomes	B.Comp. General Degree Program Outcomes
	Oral Communication	Negotiate, clarify, and document software requirements. Communicate effectively and professionally using audience appropriate technical language.	Negotiate, clarify, and document Explain software requirements using appropriate technical language. Communicate effectively and professionally using audience appropriate technical language.
	Written Communication	Compose written reports to convey technical material meeting accepted standards for writing style.	Compose written reports to convey technical material meeting accepted standards for writing style.
	Reading Comprehension	Locate and evaluate relevant written information related to a software development project, evaluate the contents, and judge the relative importance of the information.	Locate and evaluate relevant written information related to a software development project, evaluate the contents, and judge the relative importance of the information.
	Integrative Communication	Communicate effectively with a range of audiences. Present ideas at multiple levels of abstraction and from multiple perspectives.	Communicate effectively with a range of audiences. Present ideas at multiple levels of abstraction and from multiple perspectives. Apply appropriate user interface techniques to design systems that are usable by people.

Professional and Ethical Behaviour	Professional and ethical behaviour requires the ability to accomplish the tasks at hand with proficient skills in teamwork and leadership, while remembering ethical reasoning behind all decisions. The ability for organization and time management skills is essential in bringing together all aspects of managing self and others. Academic integrity is central to mastery in this outcome. At the graduate level, intellectual independence is needed for professional and academic development and engagement.		
	University of Guelph Learning Outcomes and Associated Skills	B.Comp. CS Honours Degree Program Outcomes	B.Comp. General Degree Program Outcomes
	Teamwork	Work effectively as a team, managing conflicts, to accomplish a common goal. Recognize the different roles and responsibilities within a team.	Work effectively as a team, managing conflicts, to accomplish a common goal. Recognize the different roles and responsibilities within a team.
	Ethical Reasoning	Interpret the professional and ethical responsibilities surrounding software development. Demonstrate ethical practises.	Interpret Explain the professional and ethical responsibilities surrounding software development. Demonstrate ethical practises.
	Leadership	Generate goals and milestones and recommend task breakdowns for software projects.	Generate Use goals and milestones and recommend task breakdowns for software projects.
	Personal Organization/Time Management	Recognize the need for, and have the ability to engage in, life-long learning. Consistently organize time and commitments to ensure success.	Recognize the need for, and have the ability to engage in, life-long learning. Consistently organize time and commitments to ensure success.