

Knowledge, Skills and Values

Courses at the University of Guelph-Humber combine academic rigor with real world applications. As the leaders and faculty within each program developed the curriculum they considered three major learning objectives: (1) the **knowledge** that would serve as the foundation of the course, (2) **skills** that students would develop and enhance during the course, and (3) **values** that relate to the course content. Knowledge is always expanding -- new theories replace older theories – our courses must present the newest theories and models but we also have to remember that knowledge is always evolving. Students must understand the major principles within the course and the methods used by scholars to determine new knowledge. By knowing principles and methods, students will be prepared to learn new knowledge and become lifelong learners!

Humber College and the University of Guelph provide a rich heritage that takes skills and values into account. The University of Guelph-Humber has incorporated philosophies from both institutions to ensure that your education is complete. We have identified 20 skills¹ that were examined as each course was developed. No one course can cover all 20 skills, though across all of your courses you will opportunities to address all 20 skills.

The skills are categorized into five areas:

A. Personal Skills

1. Personal Organization & Time Management involves managing several tasks at once, being able to set priorities and to allocate time efficiently in order to meet deadlines. This skill area involves formulating personal choices and goals based on self-assessment and career research. Self-assessment also entails accurately presenting skills, knowledge, experience and other factors that affect employability.

2. Responsibility is the ability to recognize and anticipate the impact of self-confidence, self-direction, and self-management on effectiveness in the workplace. It includes behaving appropriately within prescribed standards and conditions; accepting personal responsibility for actions, decisions, and progress; and evaluating and acting upon constructive feedback.

3. Adaptability & Learning is the ability to respond to change and uncertainty (e.g., labour market trends, economic cycles, global competition, emerging

¹ . The list of skills was developed from the *Generic/ Employability Skills* employed by Humber College, the University of Guelph's *Learning Objectives*, and the Bases of Competence Skills Model (*The Bases of Competence: Skills for Lifelong Learning & Employability* by Frederick T. Evers, James C. Rush, and Iris Berdrow, San Francisco: Jossey-Bass, 1998).

technologies, environmental issues, shifting demographics, personal transitions) in a positive and productive manner. This skill involves adapting to new situations and demands by applying and updating knowledge and skills plus the ability to gain knowledge from every-day experiences and to keep up-to-date on new developments. Adaptability also pertains to the ability to develop a plan for work searches that may include researching organizations, establishing employment networks, and identifying community contacts.

4. Problem-Solving consists of identifying and defining problems, gathering data related to the problem, generating and prioritizing a set of alternative solutions, and selecting and implementing the best alternative. Problem-Solving involves the ability to ask the right questions, sort out the many facets of a problem, and contribute ideas as well as answers regarding the problem.

5. Resource Management is the ability to identify and use resources effectively in order to plan for, and to attain, personal and work-related goals. This involves working within time constraints to meet deadlines, employing appropriate learning strategies, utilizing the expertise of others when appropriate, utilizing budgeting skills that meet day-to-day requirements, and identifying signs of stress and applying strategies to manage stressors.

B. Communicating

6. Reading is a fundamental skill; a key aspect of literacy, along with Writing and Speaking. Reading effectively involves comprehending and summarizing text by distinguishing between main and subordinate points; analyzing subtleties and nuances of written and graphic texts; and restating accurately what has been read, while maintaining the original meaning and emphasis.

7. Writing is the ability to produce clear, concise, correct, and coherent written text to suit the intended audience and purpose. Writing involves organizing the message according to the purpose; selecting only that content necessary to convey the message; employing style, tone, and vocabulary appropriate to the message; and controlling conventions of grammar, spelling, and punctuation. Professional writing requires the effective transfer of written information, either formally (e.g. reports, business correspondence) or informally (e.g. memos, notes).

8. Speaking proficiently means presenting information verbally to others, either one-to-one or in groups. It is the ability to deliver clear, concise, correct, and coherent spoken messages to suit the audience and purpose. Speaking effectively involves using vocabulary, style, and delivery strategies, including non-verbal cues; controlling conventions of standard spoken English, and recognizing appropriate prompts to determine how the message is being received.

9. Listening complements speaking. Listening is the ability to interpret and restate accurately, or summarize spoken messages by; following instructions, asking appropriate questions to clarify meaning, controlling internal and external elements that may cause interference, and recognizing and responding to non-verbal cues. This skill involves being attentive when others are speaking, and responding effectively to others' comments during a conversation.

10. Communicating through Evolving Media is the ability to research and/or communicate ideas by selecting from available media (e.g., formal letter, memo, e-mail, fax, and voice message) the most suitable for the message, audience, and purpose. It also involves manipulating non-linear (i.e., multi-layered) aspects of the media to create messages. The key to communicating is delivering the message clearly and accurately.

C. Mathematics & Computing

11. Mathematical generic skills are those with the immediate and important applications that enable us to deal with everyday situations, understand public issues, and solve quantitative problems. At a minimum this will include using arithmetic to perform financial calculations, comprehend arithmetic operations used in news items and documents, and understand the use of ratios, rates, proportions, and percentages. Mathematical skills also include applying geometry through the understanding of two- and three- dimensional space and calculating the areas and volumes of common geometric shapes. Basic algebra to quantify simple problems is also an asset. Basic statistical principles to interpret data, create tables and graphs, and calculate descriptive statistics, such as the mean and standard deviation, are also important.

12. Computer Applications skills enable us to use computers comfortably and productively. Computers are evolving tools that can be used for a variety of purposes. Computing is changing rapidly and students need to know how to use the latest applications. Students must be familiar with the role of computers in technology, business, and everyday life plus the use of computerized instructional programs that are used in education and training. An important aspect of this skill is the ability to discriminate among various types of electronic resources for research, analysis, graphics, and process control.

D. Teamwork & Leadership

13. Teamwork & Interpersonal incorporates the ability to work effectively in groups or teams to achieve desired goals and outcomes by recognizing people's diversity and individual differences. This skill area incorporates accepting responsibility for individual behaviour during group work, planning and making decisions with others and supporting the outcomes, and leading when appropriate. Interpersonal skills involve working well with others (superiors,

subordinates and peers), understanding their needs, and being sympathetic with them.

14. Leadership & Assertiveness involves the ability to give direction and guidance to others and to delegate work tasks to peers and subordinates in a manner which proves to be effective, and motivates others to do their best. Assertiveness focuses on individual self-expression conducted in a confident, non-threatening manner in order to advance personal or group goals. Included in this area is the ability to evaluate the behaviour of others and to provide constructive feedback.

15. Conflict Management is the ability to resolve differing and/or opposing ideas and points of view among people by identifying the different types of conflict, the sources of the conflict, and how the conflict affects interpersonal relationships. It also involves initiating conflict appropriately as well as managing conflict using effective listening, negotiating, collaborating, and problem-solving skills to overcome disharmony.

16. Decision-Making involves making timely decisions on the basis of a thorough assessment of the short- and long-term effects of decisions, recognizing the political and ethical implications, and being able to identify those who will be affected by the decisions made.

E. Thinking Skills

17. Research is the ability to understand and perform research by identifying the nature of the information required; investigating sources of information, including people, texts, databases, and the Internet; organizing the information by employing a variety of techniques such as, spreadsheets, graphs, tables, and charts; and examining the information to select the most relevant, important, and useful.

18. Critical Thinking involves identifying the premises, conclusions, and reasoning used to justify claims and evaluating the validity and soundness of arguments, based on qualitative and quantitative information, in order to accept, challenge, or defend claims or findings.

19. Responsible Risk-Taking involves taking reasonable job-related risks by recognizing alternative or different ways of meeting objectives, while at the same time recognizing the potential negative outcomes and monitoring the progress toward the set objectives.

20. Creative Thinking & Visioning encompasses using idea-generating strategies to create new ideas, concepts, products, and systems and the ability to adapt to situations of change, at times it involves the ability to initiate change, and provide "novel" solutions to problems. Creativity also involves the ability to

reconceptualize roles in response to changing demands related to an organization's success. Visioning is the ability to conceptualize the future of an organization and to provide innovative paths for the organization to follow.

To complete the picture, we also considered how courses provide opportunities for students to deal with values. These learning objectives are from the University of Guelph and serve to round out students' development.

There are eight values grouped within three areas:

A. Citizenship

1. Sense of Historical Development. All disciplines have a history, an understanding of which contributes to an understanding of the place each has in contemporary society. No discipline is self sufficient, and no discipline is autonomous. "Historical development" should not be narrowly construed to mean only the history of the discipline within its own limits, but efforts should be made to connect developments in the discipline to wider coeval social conditions. Students may thereby be endowed with a sense of the fundamental relativity of knowledge and understanding at any given time.

This objective comports also a sense of the continuity of change (and, indeed, of discontinuities), over time.

This objective may facilitate the acceptance, on the part of students, of intellectual ambiguity or uncertainty; such acceptance is a mark of depth of understanding.

2. Global Understanding may be associated with "Sense of Historical Development". It can be described as comprehension of the variety of political, religious, cultural, geographical, biological, environmental, and historical forces in the shaping of nature and the human condition. It conveys to the student an understanding of the ways in which specific cultural or geographical or other circumstances condition the differences between nations or peoples, and an understanding of the place of his or her discipline in the international setting. Global understanding may be enhanced by a sense of historical perspective, by breadth of understanding, and by independence of thought. In its turn it may itself contribute to these.

B. Moral & Aesthetic Maturity

3. Moral Maturity is marked by depth and consistency of moral judgement; by recognition that any moral judgement may be fallible; that moral judgement is

complex, in that moral principles, if they are to be applied to a specific case, may need to be interpreted. Moral maturity is a requirement in the person who is to apply a body of knowledge or a skill to the solution of a problem, or to the understanding of a situation, if the knowledge is not to remain abstract and the skill potential unrealized.

Attainment of this objective is probably best realized by appropriate consideration of moral issues in context, as they arise in the course of study. In this way, a moral perspective may be shown to be inherently important to study of a body of material, and not merely something supplementary to it (guidelines for conducting ethical discussion in the classroom have been written by the Ethics Research Group in the Department of Philosophy, at the University of Guelph).

Scope for demonstration of moral maturity can be provided in seminars and other assignments, if problems in the moral issues associated with a subject are set for consideration alongside problems in content and process.

4. Aesthetic Maturity may be described as a quality of the critical response to some object, natural or artificial, external to the self. Or it may be a process of creation and development of the self. In the former case, aesthetic maturity may be attained by a sufficient exposure, not necessarily in courses alone, to works of art (inclusive of music, literature, and drama) and to the critical traditions concerning them. Such maturity may also be directed at aesthetic valuing of features of the natural environment.

In the latter case, attainment of the quality will require an active involvement in the work of creation itself. A different order of aesthetic maturity may be attained by practice of that form of manipulation and recreation of the original object known as criticism (as distinct from appreciation).

Viewed this way, aesthetic maturity has a certain resemblance to both independence of thought and depth of understanding, in requiring an active creativity.

Aesthetic maturity need not be divorced from the specific character of individual disciplines. By possession and exercise of aesthetic maturity, students may be brought to appreciate the order, elegance, and harmony not only of the subject matter, but also of the procedures, of the discipline

C. Lifelong Learning

5. Understanding of Forms of Inquiry. Inquiry, the search for truth, information, knowledge and understanding, follows a methodology based upon systematic study, reflection, intuition and innate creativity. Inquiry involves resolving an identified problem, collecting relevant information, evaluating the

information and observing relationships in order to reach a conclusion. The student is the active inquirer and must be able to undertake the process independently. Scientific method represents a form of inquiry concerned with hypotheses development, data collection, analyses and interpretation. Just as an understanding of scientific inquiry is necessary for the educated citizen functioning in the midst of the technologies of the contemporary world, so too an appreciation of other modes of inquiry is an essential characteristic of an educated citizen. Graduates should be familiar with the modes of inquiry utilized, for example, by historians, by philosophers and by scholars concerned with the various fields of creative expression.

As outcomes of this objective, students will understand the strengths and limitations of the various forms of inquiry, and the cultural, intellectual and historic impact of these forms. The student will be able to describe similarities and differences between the inquiry methods of the physical scientist, the biological scientist, the social scientist and the scholar of the humanities.

6. Depth and Breadth of Understanding is an expression of the ability to operate across disciplinary boundaries in a coherent and productive way, with principles drawn from different disciplines. Depth of understanding depends upon mastery of a body of knowledge, but it is not to be confused with knowledge, and is not necessarily commensurate with the number of courses taken in a subject.

Depth and breadth of understanding depend upon, and themselves contribute to, independence of thought; they contribute also to a love of learning. Possession of a historical perspective may be essential to a broad and deep understanding of a subject.

At the lowest level of experience, in courses introductory to a subject, students might be shown how sets of facts may be related to others both laterally and vertically (or hierarchically). The outcome of this might be simply consciousness, on the part of the student, of the possibilities of understanding, as distinct from simply knowing.

The next higher level moves from demonstration, to the student, of interrelationships to the development of the student's own ability to create interrelations. The experience provided will develop a creative imaginativeness skillfully exercised on a body of material mastered in some detail. But the experience, like that provided for independence of thought, goes beyond display of erudition, and requires alert curiosity and a refusal to be content with mere assemblage of data. At this level the student should be expected to integrate knowledge and modes of interpretation and comprehension from different disciplines, so as to generate a new understanding. The highest level takes the student to the ability to deal in abstractions, to generate abstractions.

In general, depth and breadth of understanding are characterized by the ability to recognize the implications of the information at hand and to put it into a broader context; and by the ability to draw upon different disciplines to provide a clearer and deeper understanding of the discipline with which the student is immediately concerned.

These outcomes might be assessed in a piece of written work such as an independent research paper, in the design of an experiment, in the identification and solution of a problem, or in a work of aesthetic creation.

7. Independence of Thought. At the lowest level students are shown the possibilities of independent thinking, by an instructor who, in the classroom and elsewhere, challenges orthodoxies and criticizes received opinions. The experience provided is that of imitation or emulation of a role model. At this level, the outcome might be no more than a receptivity, on the part of the student, to critical thinking and an openness to reasoned scepticism about the authority of the expert.

At a higher level students become actively engaged in learning and thinking. At this level, they should be given the opportunity, in seminars, tutorials, or structured small group discussions, to offer their own challenges. The bases for such challenges may be unformed, and so the challenges themselves will be open to challenge. As students become more independent in thought, they are better able to combine ideas and to generate new ideas.

At the highest level, independence of thought is a manifestation of love of learning, and it may contribute to a sense of self worth and of well being. At this level, opportunities are provided for self directed learning. One accomplishment may be the ability to ask the right kinds of questions, rather than the ability always to have answers.

8. Love of Learning is perhaps the quality that activates all other qualities that are the focus of learning objectives. Its expression is not easily separable from demonstration of other virtues. Thus, the true lover of learning will demonstrate both independence of thought and depth of understanding. As a consequence, setting an objective for love of learning comports also setting an objective for other qualities as well. But love of learning is not exhausted by (e.g.) independence of thought.

Love of learning may be reflected in, or expressed in terms of, intellectual curiosity; the ability (as in independence of thought) to ask useful kinds of questions (rather than the ability always to have answers); the ability to see far reaching implications; the ability to make connections between disparate topics; energy and passion in the pursuit of knowledge and understanding; dissatisfaction with simply accumulating facts or data; critical ability.

Testing, and instruction, must minimize rote learning, and so far as possible give scope for the exercise of individual patterns of learning and individual interests.

Love of learning may be impeded by the demands of frequent evaluation of students' performance. The time frames imposed at an institutional level to provide an organizational framework for the university experience, may also impair love of learning.

Love of learning may best be enhanced by the provision of opportunities for the student's personal involvement in learning. Such opportunities are perhaps best furnished in independent research projects initiated by the student. In such autonomous, but supervised, study the student can not only engage with the conflicting views of published authorities but also see in action, close at hand, the supervisor's own love of learning.

In courses of formal instruction, the use of team teaching might help to encourage a student's own love of learning, especially if members of the teaching team take an appropriate role as "students", and if true dialogue is developed between the teachers.