

## DEGREE OBJECTIVES GUIDELINES

One of the key initiatives of curriculum renewal on the Faculty of Arts and Science is the adoption of the following learning objectives as the general goal for all of our honours bachelor degrees:

- a. Depth of knowledge that cultivates critical understanding and intellectual rigour in at least one field of study.
- b. Competencies in learning and applying knowledge that are fundamental to responsible and effective participation in the workplace, in the community, in scholarly activity, and in personal life:
  - i. Critical and Creative Thinking
  - ii. Communication
  - iii. Information Literacy
  - iv. Quantitative Reasoning
  - v. Social and Ethical Responsibility
- c. Breadth of knowledge across a range of knowledge areas that reflect the richness of the arts, the complexity of global cultures, and the varied structures, processes, and concepts of the social and natural world.
- d. Integration of skills and knowledge developed in a student's course of study within an inquiry-based activity in the upper years.

The achievement of Depth, Competencies, and Integration (items a, b, d above) will be incorporated within all Major and Specialist programs of study in order that the relevant knowledge and skills are developed in the context of a student's area(s) of concentration. The definitions and guidelines that follow are intended to provide guidance for you as a program sponsor in making the learning objectives of your programs explicit when responding to section 4 of the New Program Form.

#### **4.a. DEPTH OF KNOWLEDGE**

##### **Definition**

Depth of knowledge is the achievement of several of a set of learning outcomes, detailed below, that contribute to mastery of an area through intensive study. Depth of knowledge is to be developed through an appropriate sequence of courses or possible pathways through such courses, culminating in study at the 400-level for Specialist and Major POSTs, and study at the 300-level for Minor POSTs.

##### **Guidelines**

Depth of knowledge includes the ability to:

- understand advanced subject material as determined by those in the discipline or interdisciplinary area of study;
- demonstrate a command of increasingly advanced material that progressively probes (an aspect of) the subject more thoroughly;
- use the scholarly materials and research tools relevant to the area(s) of study;
- produce a substantial research or inquiry-based work;
- draw together a broad range of prior learning and apply it to a challenging problem or topic.

##### **Implementation**

The depth requirement will be implemented in phases to enable POSTs for whom the minimum is a challenge to meet the requirement:

- For curricular approval, all POSTs will be required to include an explanation of how the POST achieves depth of knowledge.
- All Specialist POST requirements shall include in their requirements at least 1.0 FCE at the 400-level; all Major POST requirements, at least 0.5 FCE. The current requirement that Minor POSTs contain at least 1.0 FCE at the 300-level or higher shall remain sufficient for Minors.
- All new proposals for POSTs, beginning with curriculum approved for the 2008-2009 Calendar, will be required to include the depth of knowledge requirement in their description.
- Existing POSTs will have a transition period of 3-5 years to demonstrate that they meet this requirement.
- POSTs may either provide the 400-series requirement from their own courses or cooperate with other units for student access to those units' courses.
- Small advanced seminars or individually-designed research projects may be cited as evidence of depth but are not required as a necessary element of depth.

#### 4.b. COMPETENCIES: Definitions and Guidelines

The outcomes we seek in our honours graduates go beyond basic writing and numeracy to much more sophisticated reasoning skills that will support a high level of responsible functioning in the world. We have identified competencies critical to learning and to applying knowledge for responsible, effective, and adaptable participation in the workplace, community, and daily life, regardless of the particular area of specialization. The competencies include critical and creative thinking, communication, information literacy, quantitative reasoning, and social and ethical responsibility. These competencies support: the gathering, manipulation, evaluation, and creation of a range of types of information; integration of new information with one's knowledge and beliefs; decision-making and problem-solving that draw on critical analysis and assessment of various types of information, including social and ethical factors; and communication of these processes and their results to a range of audiences. All program sponsors are asked to develop each of these competencies to the degree relevant to the area of study. To provide guidance on aligning with these new requirements, we define each of the competencies on the following pages and give specific implementation suggestions; here we note general mechanisms that are relevant to addressing any competency within programs:

- Identification of appropriate existing courses or sequences of courses within the program.

Many programs of study already develop some or all of these competencies. If a POST addresses a particular competency, all that is required is to state explicitly how students progressing through the POST achieve an appropriate level of proficiency. Program sponsors are encouraged to take into account the competency guidelines in considering whether their coverage of a specific competency could be more fully developed to better meet the needs of their students.

- Specification of integrative, inquiry-based activities where competencies are developed.

Note that all Major and Specialist POSTs must include a requirement for an integrative, inquiry-based activity, so this would be a natural means for addressing at a relatively advanced level the competencies of critical and creative thinking, communication, and information literacy, as well as others relevant to the area of study.

- Development of new courses or modules within relevant courses.

This would be an opportunity for academic units to collaborate in creating/designing courses or course materials that develop appropriate skills which are difficult to cover within the confines of a single program. For example, a group of humanities units may decide to collaborate in offering a course that develops quantitative reasoning skills relevant to the analysis of texts.

- Identification of appropriate breadth courses that students are encouraged to take.

A new breadth requirement will be developed over the 2008-2009 academic year. One of the goals of the requirement will be to identify how the various breadth areas cover relevant competencies, and so a program description might point to breadth courses that are especially complementary to that program.

#### **4.b.i. Critical and Creative Thinking**

##### **Definition**

The critical and creative thinking competency is defined as the purposeful and reflective examination of knowledge and ideas beyond memory and recall, whereby students can make informed judgments, synthesize what they have learned, and apply their ideas in novel ways.

##### **Guidelines**

This competency includes the ability to:

- read analytically;
- understand and analyze arguments;
- scrutinize and pose questions and hypotheses;
- gather, evaluate, and reason about evidence;
- examine assumptions, biases, and theoretical underpinnings of questions, evidence or concepts;
- solve problems and apply solutions;
- use one's knowledge and skills in addressing real-world problems both within one's domain(s) of expertise and in new domains;
- synthesize ideas and information into new patterns, theories or modes of understanding;
- develop well-informed new ideas, advocate for them, and defend them;
- apply knowledge to new situations and deal effectively with the unexpected.

##### **Implementation**

Programs and courses are encouraged to develop students' critical and creative thinking abilities, and give them feedback on those skills, by providing many and varied opportunities to:

- examine the structures and connections among main ideas in the discipline and their relation to those from other disciplines;
- present the variety of theoretical constructs active in the area of study;
- examine how the knowledge within the area has been generated, what questions have been posed, what theoretical and conceptual assumptions lie behind those questions, and how evidence for the ideas is evaluated;
- scrutinize common misconceptions, faulty reasoning, and misapplications of knowledge in the discipline;
- assess the historical and theoretical context of inquiry within the area;
- develop an openness to new assumptions and modes of analysis;
- extrapolate from given knowledge to new ideas and theories;
- create valid arguments and justifications for their own ideas.

#### **4.b.ii. Communication**

##### **Definition**

The communication competency is defined as the ability to express ideas, arguments, and facts to convey an intended message in a manner that is cogent and effective.

##### **Guidelines**

This competency includes the ability to:

- organize ideas into coherent arguments supported by appropriate kinds of evidence;
- structure one's communications for varying audiences and contexts;
- produce effective written work;
- present one's work orally and visually in a manner appropriate to the area of study.

##### **Implementation**

To develop communication skills most effectively within the disciplinary or interdisciplinary context of the student's area of study, each academic unit should:

- develop a year-by-year statement of learning outcomes for communication skills that reflect the conventions and standards of the discipline;
- integrate throughout its courses the development of communication skills aimed at achieving the learning outcomes;
- ensure that student grades reflect an assessment of both the knowledge content acquired by the student and the ability to effectively communicate that knowledge;
- provide opportunities to practice communication skills in written, oral, and visual formats to various audiences.

#### 4.b.iii. Information Literacy

##### Definition

The information literacy competency is defined as the ability to effectively find, evaluate, create, use and present knowledge, data and critical analyses for scholarly and other purposes.

##### Guidelines

This competency includes the ability to:

- Develop familiarity with major resources for a discipline or field, including relevant finding aids (*e.g. library web pages, research guides*), databases (*e.g. library catalogues, indexes, abstracts, bibliographies, numerical and other data*), and tools for data creation and manipulation (*e.g. software, mathematical models, experimental techniques*);
- Construct and implement effectively designed strategies to locate and retrieve information;
- Use different kinds of resources and judge when each is appropriate (*e.g. scholarly versus non-scholarly resources, encyclopedias, textbooks, books, journals, articles; primary versus secondary documents; fee-based versus free resources; music, images, videos, foreign language materials; software tools*);
- Evaluate resources and the information they contain, assessing relevance, authority and reliability;
- Synthesize information from various sources;
- Understand the relevant economic, legal and social issues surrounding the use of information (*e.g. intellectual property rights, plagiarism*);
- Identify investigative methods (*e.g. laboratory experiments, simulations, fieldwork, surveys, interviews*) and use tools to analyze information to support a particular hypothesis or to produce an original argument;
- Create and then present reliable and meaningful information based on the results of the effective investigation or research undertaken.

##### Implementation

Implementation of the information literacy competency might involve:

- Integration into the fabric of courses (*e.g. through objectives, wording of assignments, embedded library instruction, and graded course-based information literacy assignments*);
- Collaboration among faculty, students, teaching assistants, discipline-specific liaison librarians, and IT specialists;
- Consideration of models of teaching information literacy (*e.g. faculty-, librarian-, and TA-led workshops; course-customized online tutorials; and Blackboard modules*);
- Recognition that information literacy is a cumulative process taking place over a student's course of study and culminating in upper-level depth courses.

#### 4.b.iv. Quantitative Reasoning

##### Definition

The quantitative reasoning competency is defined as the ability to reason with basic mathematical, numerical and statistical concepts in order to enhance understanding of an area of study and to help navigate a data-driven world.

##### Guidelines

This competency includes the ability to:

- Approach complex problems with an understanding of the value of quantitative thinking;
- Make well-founded mathematical, numerical and statistical judgments (*e.g., involving testing hypotheses, understanding arguments, analyzing evidence, and detecting fallacies*);
- Develop skills to address problems that involve numerical data, uncertainty, statistics, or modeling (*e.g., drawing conclusions from data, evaluating risk, understanding statistical significance and inference, and understanding how assumptions influence the conclusions drawn from mathematical models*);
- Understand and use a range of algebraic, geometric, statistical, graphical and computational tools when needed in one's fields of study and in one's life beyond university.

##### Implementation

Program sponsors are encouraged to consider a range of options for enabling students to develop this competency to an appropriate level, including:

- identification of courses or sequences of courses within an academic unit that develop quantitative reasoning skills within the area of study;
- development of joint courses between units that share a common disciplinary outlook;
- development of teaching materials and course modules that could be integrated within a number of units that share a common disciplinary outlook;
- identification of courses in other units that are compatible with the program of study. (This requires coordination and cooperation among units and at the Faculty level.)

#### **4.b.v. Social and Ethical Responsibility**

##### **Definition**

The social and ethical responsibility competency is defined as the ability to engage in critical reflection upon questions of responsibility to oneself and society and to develop values of academic and personal integrity.

##### **Guidelines**

This competency includes the ability to:

- identify ethical dilemmas and consider one's own values in comparison with differing cultural, philosophical or historical perspectives;
- understand the political, social and environmental consequences of applying academic knowledge and evaluate those consequences;
- recognize and act in accordance with personal responsibility to local and global communities.

##### **Implementation**

Integrating the ethical and social responsibility competency into programs might involve:

- Case studies and teaching modules that could be integrated into discipline-focused courses;
- Teaching materials on research ethics on a discipline-specific basis, to be integrated into introductory courses;
- New or existing courses with a significant focus on the issues in the guidelines (*e.g., courses from a variety of disciplines that deal with theoretical or applied ethics, issues of social responsibility, value systems across cultures or time periods, etc.*);
- Seminars on ethical dilemmas led by professionals in fields related to the area of study;
- Public issues forums or public lectures on the ethical dimensions of contemporary issues (*e.g., ethics and scientific knowledge; bioethics; ethics and the environment*) which students could attend and write about for academic credit;
- Service-learning activities (civic engagement and community outreach), with a writing component through which students reflect upon the broader social significance of their activities;
- Team-taught interdisciplinary lecture courses that include an ethics module.

#### **4.c. INTEGRATIVE, INQUIRY-BASED ACTIVITY**

##### **Definition**

All students must participate in a course or other activity that involves substantial investigation, synthesis of knowledge, and communication of results of the inquiry.

##### **Guidelines**

This activity furthers the development of critical thinking by providing students a significant inquiry-based learning experience that integrates knowledge within their area of study, and optionally across other areas, and allows them to apply their knowledge, skills, and experiences to a comprehensive project or essay. All inquiry-based learning should involve the (independent) framing and investigation of nontrivial questions. As an integrative activity, we intend that this requirement normally be fulfilled in the third or fourth year of study, to ensure that students can undertake a creative synthesis of the knowledge and methodological skills developed during their undergraduate education. The results of the investigation should be communicated in an effective, compelling, and justifiable manner in written and/or oral form. Some significant group activity would allow students to interact with one another in a way that facilitates discussion of their investigations, but this is not required to meet the goals of this activity.

A wide range of options is possible for providing integrative, inquiry-based learning opportunities, with some examples being:

- directed studies course, capstone project course, seminar course, or other in-depth course with significant project/essay, and possibly a presentation;
- laboratory course or substantial independent field work with significant project report;
- other significant creative product with associated report;
- senior thesis;
- in-depth project/investigation and report within the context of international study abroad or other exchanges, or within a government/public sector/industrial internship, co-op, or Professional Experience Year (PEY).

This is not an exhaustive list, and other frameworks may better suit specific disciplines or interdisciplinary programs. This type of experience should have some consistency in interpretation, but be flexible enough to accommodate disciplinary differences.

##### **Implementation**

Every Major and Specialist POST will include as part of the program requirements the completion of an integrative, inquiry-based activity within the program. Each unit will thus need to specify the possible integrative, inquiry-based activities that are eligible for meeting this requirement in each of their Major and Specialist POSTs. As part of the curriculum approval process, the POST Advisory Committee will review these to ensure that there is consistency in interpretation of the goals for this activity outlined above.

Units are further encouraged to review the design for all four years of their programs to ensure that students are well prepared to engage in the activities they provide for meeting this requirement. The goal is that the design of a POST will reflect the need for students to engage in one of the integrative, inquiry-based activities in their upper years, and that preparatory experiences for such opportunities should occur at earlier stages in a program.