UNIVERSITY OF ALBERTA
FACULTY OF GRADUATE STUDIES & RESEARCH

PhD Program Learning Outcomes and Forms of Evidence
Template with Suggested Content

This document synthesizes the Alberta Credential Framework and provides content ideas for programs to use in defining their learning outcomes. The University of Alberta PhD Learning Outcomes within this template were developed by the University of Alberta, in addition to or in support of Alberta Credential Framework, and have been endorsed by FGSR Council.

Alberta Credential Framework for PhD Programs
Developed by the Government of Alberta

Post-secondary programs in Alberta must meet specific criteria that are defined by the Government of Alberta. This oversight helps ensure learning opportunities for post-secondary students are guided by Alberta's adult learning system principles.

The Alberta Credential Framework defines the following outcomes for PhD program graduates:

PHD GRADUATE COMPETENCY	DESCRIPTION
DEPTH AND BREADTH OF KNOWLEDGE	Able to independently undertake pure or applied research and professional skills at an advanced level, and translate knowledge to research or practice settings. A thorough understanding of a substantial body of knowledge with expertise in a specialized field that is at the forefront of an academic discipline or area of professional practice.
CONCEPTUAL AWARENESS AND/OR KNOWLEDGE OF RESEARCH	A conceptual understanding and methodological competence that provides the graduate with the ability to: ● conceptualize, design, and implement research for the generation of new knowledge, applications, or understanding at the forefront of the discipline and to adjust the research design or methodology in the light of unforeseen problems. ● make informed judgments on complex issues in specialist fields, sometimes requiring new methods. ● produce original research, or other advanced scholarship, of a quality to satisfy peer review, and to merit publication.
APPLICATION OF KNOWLEDGE	The capacity to: ● undertake pure and/or applied research at an advanced level, and ● contribute to the development of academic or professional skill, techniques, tools, practices, ideas, theories, approaches, and/or materials.
AWARENESS OF LIMITS OF KNOWLEDGE	An appreciation of the limitations of one's own work and discipline, of the complexity of knowledge, and of the potential contributions of other interpretations, methods, and disciplines.
COMMUNICATIONS SKILLS	The ability to communicate complex and/or ambiguous ideas, issues, and conclusions clearly and effectively.
PROFESSIONAL CAPACITY/AUTONOMY	● The qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and largely autonomous initiative in complex situations. ● The intellectual independence to be academically and professionally engaged and current. ● The ability to evaluate the broader implications of applying knowledge to particular contexts.

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KNOWLEDGE The ability to apply and exercise awareness of the limits of advanced level knowledge in a specialized field	

University of Alberta PhD Learning Outcomes	**Knowledge** learning outcomes are specifically defined within programs, in alignment with these requirements from the Alberta Credential Framework:
	
	1. **Depth and Breadth of Knowledge** – Students will be able to independently undertake pure or applied research and professional skills at an advanced level, and translate knowledge to research or practice settings. Students will demonstrate a thorough understanding of a substantial body of knowledge with expertise in a specialized field that is at the forefront of an academic discipline or area of professional practice.
	
	2. **Application of Knowledge** – Students will have the capacity to:
	    ● undertake research at an advanced level, and
	    ● contribute to the development of academic or professional skill, techniques, tools, practices, ideas, theories, approaches, and/or materials.
	
	3. **Awareness of Limits of Knowledge** – Students will have an appreciation of the limitations of one's own work and discipline, of the complexity of knowledge, and of the potential contributions of other interpretations, methods, and disciplines.

Program-Specific Learning Outcomes	**Depth and Breadth of Knowledge** Students will demonstrate: 1. advanced-level knowledge of the general field of [name of field] and specific field(s) of [name of field(s)] 2. expert knowledge in their field of specialization **Application of Knowledge** Students will demonstrate the capacity to: 1. undertake [pure/applied/other/NA] research at an advanced level, and 2. contribute to the development of academic or professional skill, techniques, tools, practices, ideas, theories, approaches, and/or materials. **Awareness of Limits of Knowledge** Students will demonstrate: 1. an appreciation of the limitations of one's own work and discipline, of the complexity of knowledge, and of the potential contributions of other interpretations, methods, and disciplines. 2. an ability to critically evaluate current research and research techniques and methodologies.
Forms of Evidence	**Knowledge** will be assessed and students provided with regular oral and written formative feedback in programs through the appropriate supervisor meetings, supervisory committee meetings, proposal and final thesis defence, specifically: **Depth and Breadth of Knowledge** 1. Topic presentation and discussion during yearly supervisory committee meetings. 2. The successful completion of [list of course work or learning activities, broken down in specific courses with specific learning outcomes] 3. Passing the [candidacy/qualifying/ comprehensive] examination or completing all explicitly detailed and

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justified, in writing, committee requirements of a conditional pass in this examination.

Application of Knowledge

1. Research progress during yearly supervisory committee meetings.
2. The review, defence and approval of a PhD proposal by a [exam committee name].
3. The defence of a PhD thesis.

Awareness of Limits of Knowledge

Conducting [field appropriate] review of the state of the art [literature, techniques, standards, works of art] and developing [relationships, networks, collaborations] to identify and explain the [history, theory, research, techniques, paradigms] which is reviewed, defended and approved during of a PhD proposal by a [exam committee name] and at the PhD defence examination.

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RESEARCH COMPETENCY
The ability to conceptualize, design and implement research for the generation of new knowledge; to make informed judgments on complex issues, in a specialized field

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University of Alberta PhD Learning Outcomes

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Research Competency learning outcomes are specified below and are to be augmented in programs using field specific requirements, as appropriate.

Students will be able to:

1. Conceptualize, design, and implement research for the generation of new knowledge, applications, or understanding at the forefront of the discipline and to adjust the research design or methodology in the light of unforeseen problems.

2. Make informed judgments on complex issues in specialist fields, sometimes requiring new methods, such as being able to:

- Generate research questions/hypotheses based on experience, discipline specific expertise, and scholarly literature.
- Conceptualize, design, and implement a research project of significant scope to complete a thesis.
- Assess strengths and weaknesses of various methodological approaches relevant to a research question.
- Select, defend, and apply a methodological approach to answer a research question.
- Locate and/or generate information/data relevant to a research question.
- Situate a research question within the existing field specific knowledge and where appropriate outside the field and/or discipline.
- Organize information/data to reveal patterns/themes.
- Analyze information/data and synthesize information to generate new knowledge/understanding.
- Monitor research progress, refine, and pivot approach as needed.

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Program-Specific Learning Outcomes

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Students will be able to produce original research, or other advanced scholarship, of a quality to satisfy peer review, and to merit publication in their field.

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Forms of Evidence

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Research Competency will be <u>assessed</u> and students provided with <u>regular oral and written formative feedback</u> in programs through the appropriate committee meetings, proposal and final thesis defence, specifically:

- Topic presentation and discussion during yearly supervisory committee meetings.
- The review, defence and approval of a PhD proposal by a [exam committee name].
- The review, defence and approval of a PhD thesis by a [exam committee name].
- The completion, as first author, of papers or creative works for peer review, in volume and form as appropriate for the field.
- Presentations to field appropriate stakeholders at [local, national and/or international conferences, industry, clinics venues appropriate in the field].

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COMMUNICATION SKILLS The ability to demonstrate written communication, oral communication, and listening skills, and to communicate effectively and professionally with a broad audience	
University of Alberta PhD Learning Outcomes	**Communication Skills** learning outcomes are specified below and are to be augmented in programs using field specific requirements as appropriate. Students will be able to communicate complex and/or ambiguous ideas, issues, and conclusions clearly and effectively to specialist and non-specialist audiences, using: 1. written communication 2. oral communication Beneficial Options Students will be able to: ☐ communicate using technical, digital, or other methods ☐ use active listening skills
Program-Specific Learning Outcomes	Students will demonstrate the ability to write field appropriate publications aimed at peer review.
Forms of Evidence	**Communication Skills** will be assessed and students provided with regular oral and written formative feedback in programs through the appropriate committee meetings, proposal and final thesis defence, and publications. Required forms of evidence include: 1. Thesis Proposal • Student successfully wrote their doctoral research proposal. • Student successfully presented and orally defended their doctoral research proposal. 2. Thesis Defence • Student successfully wrote their doctoral thesis. • Student successfully presented and orally defended their doctoral thesis. 3. Communication with specialist and non-specialist audiences - in manners relevant to the field of study, such as: • Clear and effective documentations for course work, grant proposals, and/or manuscripts, as appropriate for the program • Discipline-related communications using technical (eg. schematic), media (eg. video), or digital (eg. code) formats for academic and non-academic audiences • Presentations or lectures at conferences • Teaching of courses, guest lecturing, etc. • Drafts of publications for internal and peer review Beneficial Options ☐ Completing general communication and/or social media professional development or assessment ☐ Completing active listening professional development and/or applying active listening in professional settings

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PROFESSIONAL CAPACITY/AUTONOMY The ability to research, reflect upon, and take ownership of the development of skills and career goals	

University of Alberta PhD Learning Outcomes	**Professional Capacity/Autonomy** learning outcomes are specified below and are to be augmented in programs using field specific requirements as appropriate.
	
	Students will be able to demonstrate:
	
	1. The qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and largely autonomous initiative in complex situations
	
	2. The intellectual independence to be academically and professionally engaged and current, developed in part through the Individual Development Plan process of:
	
	   ● researching potential career options
	   ● reflecting upon skills and competencies in the University of Alberta graduate attribute areas of creativity, communication, confidence, scholarship, ethical responsibility, critical thinking, and collaboration
	   ● creating timelines and milestones for professional development, academic, and personal commitments
	   ● reviewing progress regularly
	
	3. The ability to evaluate the broader implications of applying knowledge to particular contexts.
	
	4. The ability to receive, handle and act upon, and provide constructive feedback.
	
	<u>Beneficial Options</u>
	
	Students will be able to demonstrate:
	
	☐ The ability to take initiative to identify need and provide service to a community.
	☐ The ability to acquire new, or enhance existing leadership skills, including those required to teach or supervise students.
	☐ The ability to take initiative to bring about positive change in academic, professional and personal contexts, guided by the principles of equity, diversity and inclusion (EDI).

Program-Specific Learning Outcomes	Students will demonstrate self-direction and originality in tackling and solving problems, and autonomy in planning and executing research. <u>Beneficial Options</u> ☐ the capability to teach a course and/or be a teaching assistant in the field of [name of field] (e.g. of field specific teaching requirement) ☐ field specific communication and networking skills [e.g. field specific professional requirements] ☐ [program specific professional development requirements]
Forms of Evidence	**Professional Capacity/Autonomy** will be <u>assessed</u> and students provided with <u>regular oral and written formative feedback</u> in programs through: 1. Presenting and defending degree progress during yearly (or more frequent) formal supervisory committee meetings; progress and performance are to be kept in the minutes of the meeting and within program designated forms 2. Documenting, and reviewing with their supervisor, feedback received during supervisor meetings, supervisory committee meetings and candidacy exam, and addressing identified issues. <u>FGSR Professional Development Requirement</u> 3. Completing FGSR or program-specific Individual Development Plan

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4. Completing 8 hours of professional development activities

Beneficial Options

☐ Providing feedback to other team members and/or staff, as appropriate and/or through peer reviewing of field appropriate publications.

☐ Completing some of the mandatory 8 hours of professional development activities in the areas of:

- Equity, Diversity, and Inclusion
- leadership
- professional behaviors, the workplace, and career management
- communication and networking

☐ Completing service activities within the community.

☐ Successfully teaching or being a Graduate Teaching Assistant, and receiving evaluative feedback, for at least an undergraduate course in [field]

☐ [Program specific professional development requirements assessments]

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<td colspan="2">ETHICS
The ability to identify, explain, analyze, and propose solutions to ethical issues</td>
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<td>University of Alberta PhD Learning Outcomes</td>
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Ethics learning outcomes are specified below and are to be augmented in programs using field specific requirements as appropriate.

Students will be able to:

1. Identify ethical concerns specific to their field of research, such as treatment of human and animal subjects, interdisciplinary research, and Indigenous research.

2. Recall, recognize, analyze, discuss and act in ethical matters in:
   - the subject field under investigation including those specific to course work, capstone project, thesis, scholarship and funding applications,
   - academic conduct, and
   - interactions with others in the community as stipulated in the code of student behaviour.

3. Propose solutions to ethical dilemmas and articulate what makes a particular course of action ethically defensible.

4. Identify ethical concerns in academic integrity, use and citation of sources, the misrepresentation of data and/or facts.

5. Recognize the importance of information and data handling (confidentiality, transparency, not falsifying data, etc).

<u>Beneficial Options</u>

☐   Explain, recognize, and analyze ethical areas of responsibility held when teaching or mentoring within their field.

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<td>Program- Specific Learning Outcomes</td>
<td>Students will complete program specific ethics requirements in [add requirements]</td>
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<td>Forms of Evidence</td>
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Ethics will be <u>assessed</u> and students provided with <u>regular oral and written formative feedback</u> in programs through student records of:

1. In the first year of their program, completing program course/workshops, or FGSR workshops, or other approved formal activities in the area of ethics, which have embedded assessments and may include:
   - Student code of conduct,
   - Plagiarism,
   - Copyright, and
   - Sexual violence

2. Beyond the first year of their program, completing program specific ethics training as appropriate, including elements listed in the ethics learning outcomes

3. Demonstrating field-appropriate application of ethics principles within the research proposal, thesis, and thesis defence.

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