

Animal Biology Learning Outcomes Approved by the Department of Animal Bioscience Curriculum Committee

University of Guelph Learning Outcomes for the B.Sc. Honours Major in Animal Biology (BSCH.ABIO)

A. GENERAL SKILLS

1. Problem Solving & Critical Thinking

- Critically evaluate ideas and arguments by gathering and integrating relevant information, assessing its credibility, and synthesizing evidence to formulate a position.
- Identify problems and independently propose solutions using creative approaches, acquired through interdisciplinary experiences, and a depth and breadth of knowledge/expertise.
- Accurately interpret and use numerical information to evaluate and formulate a position.

2. Communication

- Accurately and effectively communicate ideas, arguments and analyses, to a range of audiences, in graphic, oral and written form.

3. Professional and Ethical Behaviour

- Demonstrate personal and professional integrity by respectfully considering diverse points of view and the intellectual contribution of others, and by demonstrating a commitment to honesty and equity, and awareness of sustainability, in scientific practice and society at large.
- Collaborate effectively as part of a team by demonstrating mutual respect, leadership, and an ability to set goals and manage tasks and timelines.
- Plan for professional growth and personal development within and beyond the undergraduate program.
- *Critically appraise and debate welfare issues in relation to the ethical treatment of animals.*
- *Acquire and develop relevant practical and theoretical skills to support continued studies (e.g. graduate studies, veterinary medicine, etc.) and/or potential employment (e.g. veterinary care, animal industry, zoological institutions, etc.)*

B. DEGREE RELATED SKILLS & KNOWLEDGE

1. Scientific Method

- Apply scientific methods and processes by formulating questions, designing investigations and synthesizing data to draw conclusions and make scientifically-based decisions.
- Generate and interpret scientific data using quantitative, qualitative and analytical methodologies and techniques.

2. Breadth & Depth of Understanding in a Particular Scientific Discipline

- Apply the core concepts of math, physics, chemistry and biology to a chosen scientific discipline.

- Demonstrate knowledge of the ethical, economic, commercial and social implications of scientific discovery and technological innovation.
- Interpret current scientific concepts and gaps in knowledge (and methods) in light of the historical development of a chosen discipline.
- *Demonstrate knowledge encompassing genetics, nutrition, physiology and behavior and their interactions on the health and welfare of domesticated, companion and wildlife animal species.*
- *Apply an integrated and broad foundation of life sciences (from molecules to populations) to appreciate and further explore the relationship of animals within society.*

3. Scientific Technology & Techniques in a Scientific Discipline

- Apply contemporary research methods, skills and techniques to conduct independent inquiry in a chosen scientific discipline.
- *Analyze physiological processes (i.e. reproductive, neurological, endocrine, immunological) to evaluate and regulate body functions/systems of animals*
- *Apply knowledge of nutrient metabolism to improve animal wellness and productivity*
- *Apply biotechnology to better understand gene function and generate novel products*
- *Quantify, evaluate and utilize genetic and genomic diversity in animal populations*
- *Assess and appraise indicators of behaviour and welfare to enhance animal wellness*
- *Explore animals as models for human research*