Illustrative Example for QAF 2.1.2.4.a)

Trent University, BSc Honours, Conservation Biology

The Committee highlighted Table 5A for its effective linkage of assessment examples to each Program-level Learning Outcome (PLO). Presented in a detailed format, the table includes descriptions for each assessment method, specifying the course, assessment goals, and associated learning outcomes at the course level—offering meaningful context and clarity.

Additionally, the table maps courses to University Degree-Level Expectations (UDLEs), which the Committee found particularly helpful. This structure supports a clear and well-organized presentation of the content required under QAF 2.1.2.4.a).

Nevertheless, to further enhance clarity and accessibility, the Committee suggested including a comprehensive bulleted list of assessment methods as a quick reference alongside the detailed table.

The Committee also noted that the repetition of PLOs—resulting from their alignment with program goals—can be somewhat confusing. The inclusion of program goals within the same table may contribute to this complexity, making the layout feel slightly unwieldy. Despite this, the Committee commended the depth and quality of the assessment details, which provide valuable insight into the program's learning design.

5 ASSESSMENT OF STUDENT LEARNING

Note: A Program Goal will not necessarily align with only one UDLE/GDLE. It may be the case that a program goal meets 1 or more UDLEs/GDLEs.

Table 5A: Program Goals, Learning Outcomes and Alignment with Degree Level Expectations

PROGRAM GOAL	RELATED UNDERGRADUATE DEGREE LEVEL (UDLE)	LEARNING OUTCOMES AT COURSE LEVEL *(should be measurable)*	ILLUSTRATIVE EXAMPLES *Provide 1 or 2 for each program goal – showing alignment of assessment methods with degree level expectations Example should reference identified evaluation or assessment method in a specified course and show how student achieves UDLE*
Program Goal 1 Effective conservation biologists know the theoretical principles of ecology and evolution.	**UDLE 1: Depth and Breadth of Knowledge** a) general knowledge and understanding of many key concepts, methodologies, theoretical approaches and assumptions in a discipline b) a broad understanding of some of the major fields in a discipline, including, where appropriate, from an interdisciplinary perspective, and how the fields may intersect with fields in related disciplines c) an ability to gather, review, evaluate and interpret information relevant to one or more of the major fields in a discipline d) some detailed knowledge in an area of the discipline e) critical thinking and analytical skills inside and outside the discipline	• Students will demonstrate an understanding of classical genetics, including Mendelian genetics, pedigree analysis, and sex linkage. • Students will understand biological interactions that occur from the individual to the ecosystem level of organization. • Students will understand the basic principles of evolution through natural selection and the role of artificial selection (drugs or other chemicals) in driving resistance to pharmaceuticals, disease, parasites	In BIOL-FRSC 2050H-Introduction to Genetics students will use theories of classical genetics (Mendelian's laws of biological inheritance, chromosome theory of inheritance, and theory of natural selection). Students will use pre-gathered data in a laboratory setting to prove how genetics can influence or affect the survival of a specific species. Based on results students will understand that genetics is one factor that influences the outcome of evolutionary processes. Students will select a species and investigate several interactions during field labs. Students will then use computer simulations to determine the evolution of that species. Students will need to draw upon their interdisciplinary and broad understanding of the key concepts and theoretical approaches in evolution to make assumptions and identify influences that may have impacted the development of the species. Students will complete a lab report based on the evaluation and interpretation of information gathered from simulations. Students will show that evolution has a mathematical basis that informs population genetics. (BIOL 1020H)

PROGRAM GOAL	RELATED UNDERGRADUATE DEGREE LEVEL (UDLE)	LEARNING OUTCOMES AT COURSE LEVEL *(should be measurable)*	ILLUSTRATIVE EXAMPLES *Provide 1 or 2 for each program goal – showing alignment of assessment methods with degree level expectations Example should reference identified evaluation or assessment method in a specified course and show how student achieves UDLE*
	f) the ability to apply learning from one or more areas outside the discipline.	or agricultural pests. • Students will demonstrate knowledge of evolution through computer simulations. • Students will devise an experiment to test what factors influence the occurrence of organisms.	
<u>Program Goal 2</u> Effective conservation biologists understand endangered species legislation and other regulatory instruments and international conventions to protect habitats and species.	**UDLE 1: Depth and Breadth of Knowledge** a) general knowledge and understanding of many key concepts, methodologies, theoretical approaches and assumptions in a discipline b) broad understanding of some of the major fields in a discipline, including, where appropriate, from an interdisciplinary perspective, and how the fields may intersect with fields in related disciplines c) an ability to gather, review, evaluate and interpret information relevant to one or more of the major fields in a discipline d) some detailed knowledge in an area of the discipline e) critical thinking and analytical skills inside and outside the discipline f) the ability to apply learning from one or more areas outside the	• Students will understand critical biological parameters that directly impact species and populations at risk. • Students will demonstrate an understanding of environment legislation and its impact on a specific type of habitat or species. • Students will demonstrate their understanding of how biological parameters that impact species are incorporated into species-at-risk legislation frameworks; and understanding legislative frameworks for all environmental laws in Canada.	Students will select a case study, and will specifically use Canada's Species-at-Risk Act (SARA) and provincial species-at-risk legislation to examine the different environmental pressure points and biological properties that impact the endangered or threatened status of an identified species or population. Students will evaluate the role of federal and provincial governments in setting appropriate policy to protect habitats and species. In BIOL 4510H, students will use learned methods of enquiry from 2000- and 3000-level courses to evaluate approaches and techniques, in support of specific legislation or provide arguments that support challenges that may be faced in enforcing the legislation. Different disciplines have opposing priorities and students will need to provide a response that considers all factors. This assignment will require students to draw upon their critical thinking and analytical skills from several disciplines and students will use established research techniques to sustain their arguments. Students will identify a species or habitat and will use peer-reviewed articles and professional journals to identify whether legislation, specifically environmental law, supports or is harmful to the species. In this course, ERST 3250H, students will be expected to provide interpretation and use critical analysis to provide arguments for or against the legislation and its impact on the selected species or habitat. Students will show that they understand laws affecting conservation biology, and will come to realize their own limits of knowledge.

PROGRAM GOAL	RELATED UNDERGRADUATE DEGREE LEVEL (UDLE)	LEARNING OUTCOMES AT COURSE LEVEL *(should be measurable)*	ILLUSTRATIVE EXAMPLES *Provide 1 or 2 for each program goal – showing alignment of assessment methods with degree level expectations Example should reference identified evaluation or assessment method in a specified course and show how student achieves UDLE*
	discipline. **UDLE 2: Knowledge of Methodologies** Students will demonstrate an understanding of methods of enquiry or creative activity, or both, in their primary area of study that enables the student to: evaluate the appropriateness of different approaches to solving problems using well established ideas and techniques; and devise and sustain arguments or solve problems using these methods. **UDLE 5: Awareness of Limits of Knowledge** Students will demonstrate an understanding of the limits to their own knowledge and how this might influence their analyses and interpretations.		Students will complete a project in ERST 3250H on a current issue in environmental law. Students will be expected to attend a public meeting where matters involving the law and public interest intersect. Students will be required to present their findings from the public meeting in both a written report and verbal presentation. Students will understand appropriate methods of inquiry and different approaches to solving problems to support their findings/results.
<u>Program Goal 3</u> Effective conservation biologists understand organismal biology, systems of classification, and the diversity of species responses to environmental perturbations.	**UDLE 1: Depth and Breadth of Knowledge** a) a general knowledge and understanding of many key concepts, methodologies, theoretical approaches and assumptions in a discipline b) a broad understanding of some of the major fields in a discipline, including, where appropriate, from an interdisciplinary perspective, and how the fields may intersect with fields in related disciplines c) an ability to gather, review, evaluate and interpret information relevant to one or more of	• Students will understand the taxonomy of organisms and be able to look up the IUCN status. • Students will identify methods of identification of biological diversity. • Students learn how to identify and classify species, and determine their international conservation status, while also learning how to	In BIOL 1020H, students will learn the taxonomy of organisms. Information will be relayed to students through lecture and laboratory format. Students will complete assignments related to taxonomy where they will be required to use IUCN's list of threatened species. Students will complete assignments that will assess their knowledge and ability to understand taxonomy. Students will complete an assignment where they will select a taxonomic group, and; using identification guides, finding published papers on organisms, they will write a 2-3 page report summarizing the information. Students will demonstrate that they have an understanding of organisms, and have the ability to gather and interpret information on systems of classification (BIOL 1020H). In BIOL 4500H, Population Dynamics students will complete at least one outdoor lab where they will be tasked with trying to estimate population sizes

PROGRAM GOAL	RELATED UNDERGRADUATE DEGREE LEVEL (UDLE)	LEARNING OUTCOMES AT COURSE LEVEL *(should be measurable)*	ILLUSTRATIVE EXAMPLES *Provide 1 or 2 for each program goal – showing alignment of assessment methods with degree level expectations Example should reference identified evaluation or assessment method in a specified course and show how student achieves UDLE*
	the major fields in a discipline d) some detailed knowledge in an area of the discipline e) critical thinking and analytical skills inside and outside the discipline f) the ability to apply learning from one or more areas outside the discipline. **UDLE 2: Knowledge of Methodologies** Students will demonstrate an understanding of methods of enquiry or creative activity, or both, in their primary area of study that enables the student to: evaluate the appropriateness of different approaches to solving problems using well established ideas and techniques; and devise and sustain arguments or solve problems using these methods. **UDLE 3: Application of Knowledge** a) Students will demonstrate the ability to review, present, and interpret quantitative and qualitative information to: i) develop lines of argument; ii) make sound judgments in accordance with the major theories, concepts and methods of the subject(s) of study b) the ability to use a basic range of established techniques to: i) analyse information; ii) evaluate the appropriateness of different	use the primary literature (BIOL 1020H) • Students will understand principles of population biology and the theories of why some species are rare and others common. • Students will have an understanding of the natural history of at least two of the major groups of vertebrates, insects, and plants through detailed lectures of their biology. • Students will be able to identify the major plant families and the relative functional roles of these plants as well as the diversity of plant reproductive systems. • Students will identify minor deviations in the environment and their effect on a specific species. • Students will be able to perform the calculations of means and dispersion from data collected	(plants as they are sessile) within a defined area. The lab will be hands-on and the focus will be on biases in estimation and detection of populations. Students will learn how to assess age structures of populations and how to assess the potential of different age classes to contribute to population growth. Students will be required to use matrix population tables and to create and analyse life tables. Students will discuss regulating versus limiting factors in populations and show that they understand the theory behind population biology, which includes an historical outlook of these theories – why some species flourish and others diminish over periods of time. Students' ability to understand experimental design, to express ideas in written form and to interpret results will be criteria assessed in the final evaluation of written reports. In BIOL3380H students will use GPS technology in the field, to map out locations of diseased trees and determine, based on knowledge of the species of neighbouring, unaffected trees, the establishment patterns and the development of 'future forests' under various assumptions and scenarios. In this course students will also learn the basic principles of restoration ecology and develop a realistic plan to restore a degraded campus habitat. Also, in that class (and BIOL 4140H) students will learn to identify and research habitat associations of waterfowl along the length of a diverse river that passes through urban and rural habitats. Students will be tested on taxonomy and evolutionary relationships of plant communities and how to identify plants in Ontario (BIOL 3170H, BIOL3190H). Students will understand the important role of plants in food webs and how these food web relationships can be quantified (BIOL 3380H).

PROGRAM GOAL	RELATED UNDERGRADUATE DEGREE LEVEL (UDLE)	LEARNING OUTCOMES AT COURSE LEVEL *(should be measurable)*	ILLUSTRATIVE EXAMPLES *Provide 1 or 2 for each program goal – showing alignment of assessment methods with degree level expectations Example should reference identified evaluation or assessment method in a specified course and show how student achieves UDLE*
	approaches to solving problems related to their area(s) of study; iii) propose solutions c) the ability to make use of scholarly reviews and primary sources	from two or more sites with different environmental conditions.	
<u>Program Goal 4</u> Effective conservation biologists understand the genetic basis for adaption to modern environments.	**UDLE 1: Depth and Breadth of Knowledge** a) general knowledge and understanding of many key concepts, methodologies, theoretical approaches and assumptions in a discipline b) a broad understanding of some of the major fields in a discipline, including, where appropriate, from an interdisciplinary perspective, and how the fields may intersect with fields in related disciplines c) an ability to gather, review, evaluate and interpret information relevant to one or more of the major fields in a discipline d) some detailed knowledge in an area of the discipline d) critical thinking and analytical skills inside and outside the discipline f) the ability to apply learning from one or more areas outside the discipline. **UDLE 2: Knowledge of Methodologies** Students will demonstrate: An understanding of methods of enquiry or creative activity, or both, in their primary area of study that enables the student to:	• Students will be able to quantify both genetic diversity and genetic differentiation, and explain the multiple processes on which these measures depend. • Students will be able to describe the most commonly used molecular markers in population genetics, including the types of data they generate, and their limitations. • Students will explain how genetic data can give us insight into ecology and evolution, including phylogeography, behavioural ecology, taxonomic delineation, and conservation genetics.	In BIOL 3600H, students will complete a series of labs in which they will be required to apply the theory of population genetics to the fields of: • phylogeography; • conservation genetics; and, • behavioural ecology Students will evaluate results collected in the labs and will analyse data to infer relationships, predict long-distance dispersal, and/or quantify genetic diversity. The students will evaluate the appropriateness of the methodology to the problem to be solved. Students will be expected to draw upon appropriate knowledge and critically evaluate and interpret results. Through these diverse lab components, students will be able to identify molecular markers and understand their differences and limitations in investigating ecological and evolutionary processes.

PROGRAM GOAL	RELATED UNDERGRADUATE DEGREE LEVEL (UDLE)	LEARNING OUTCOMES AT COURSE LEVEL *(should be measurable)*	ILLUSTRATIVE EXAMPLES *Provide 1 or 2 for each program goal – showing alignment of assessment methods with degree level expectations Example should reference identified evaluation or assessment method in a specified course and show how student achieves UDLE*
	evaluate the appropriateness of different approaches to solving problems using well established ideas and techniques; and devise and sustain arguments or solve problems using these methods.	• Students will be able to apply their knowledge of methodology and apply it to a real-world issue.	
Program Goal 5 Effective conservation biologists understand how best to communicate with scientists and non-specialists in promoting conservation of biodiversity.	**UDLE 4: Communication Skills** Students will demonstrate the ability to communicate accurately and reliably, orally and in writing to a range of audiences. **UDLE 5: Awareness of Limits of Knowledge** Students will demonstrate an understanding of the limits to their own knowledge and how this might influence their analyses and interpretations. **UDLE 6: Autonomy and Professional Capacity** a) Students will demonstrate qualities and transferable skills necessary for further study, employment, community involvement and other activities requiring i) the exercise of personal responsibility and decision-making; and ii) working effectively with others b) Students will demonstrate the ability to identify and address their own learning needs in changing circumstances and to select an appropriate program of further study c) Students will demonstrate behaviour consistent with	• Students will be capable of communicating conservation science with clarity and economy, in way that is accessible to non-specialists. • Students will acquire and hone their skills at conveying conservation science in a concise and accessible way. • Students will gain an appreciation for the importance of an understanding of biology as an informed citizen.	Conservation Biology relies heavily on the power of speech and the written word to protect our environment and advocate for habitats and species so it will be critical for students to excel in this area. In BIOL 4390H, students will present three oral presentations, 10 minutes, 3 minutes, and 30 seconds, and will also be required to write a plan-language summary. Feedback received will help the student understand and improve at each iteration. In BIOL 3600H, Ecological Genetics students will present on their ability to: • communicate evolutionary and ecological genetic terms in non-specialist language, and; • summarize a news story in the ecological genetics and proposing how they could use genetic data to further research the question/related question Student presentations will be graded based on their ability to present the issues clearly in non-scientific terms, without biases. Students will realize the importance of transferable skills – communication, and the importance of being able to convey issues to the community in understandable language. The new courses, specific to Conservation Biology, have been designed specifically to provide opportunities to evaluate students on their film, photographic, and text (including social media) methods to communicate conservation science to non-scientists and policy makers, and their abilities to accurately distill messages from the conservation science literature. Students will learn the importance of effective communication both to peers in a professional setting and to non-scientists. In BIOC 2100 and 3100H students will participate in workshops and seminars where they will be required to present issues to a wide range of audiences, including: experts in the field, non-scientists,

PROGRAM GOAL	RELATED UNDERGRADUATE DEGREE LEVEL (UDLE)	LEARNING OUTCOMES AT COURSE LEVEL *(should be measurable)*	ILLUSTRATIVE EXAMPLES *Provide 1 or 2 for each program goal – showing alignment of assessment methods with degree level expectations Example should reference identified evaluation or assessment method in a specified course and show how student achieves UDLE*
	academic integrity and social responsibility		lobbyists, and politicians. Students will learn to create and develop presentations relevant to their audience to support their arguments and in support of the protection of species and habitats. Students will also be required to use peer-reviewed literature to support arguments and will incorporate this research into written reports and blogs. Formative feedback will be an important component of these courses to assist our students in growing, learning and enhancing both their verbal and written skills. Students will receive critical feedback on areas for improvement from their peers and audiences. As well, students will be asked to identify their own learning challenges and demonstrate areas where they can improve. The full-year placement course (4400Y) and the co-op terms will provide our students with the hands-on experience to practice and further enhance their communication skills. As well, students will have the ability to demonstrate their employable skills: critical thinking, problem solving, and decision-making. The experiential component of this course will also provide students with the ability to practice academic integrity and social responsibility in real-life situations. Students will receive direct feedback from their supervisors on their abilities during the placement/work terms.
<u>Program Goal 6</u> Effective conservation biologists understand how to work with a team to promote mutual goals in conserving biodiversity.	**UDLE 4: Communication Skills** Students will demonstrate the ability to communicate accurately and reliably, orally and in writing to a range of audiences. **UDLE 5: Awareness of Limits of Knowledge** Students will demonstrate an understanding of the limits to their own knowledge and how this might influence their analyses and interpretations. **UDLE 6: Autonomy and Professional Capacity** a) Students will demonstrate qualities and transferable skills necessary for further	• Students use the scientific method to devise hypotheses and predictions. • Students will work in a team to gather and analyse data. • Students will present their findings demonstrating limitations encountered during the collection and analysis of data.	Team work is integral to this program. Students, specifically in the BIOC courses will be required to work in groups. These courses in Communicating Conservation will provide our students with the ability to be strong communicators and effectively collaborate with other students. Students will be required to complete a group project where a formal hypothesis and predictions will be required. This will be a real-life project where students will work together to collect and analyze data collected from the field. Students will be required to complete a written report and present their findings orally. Instructor and peer feedback will provide students with feedback on how the team worked as a whole and where improvements could be made. In BIOL 3380H, students work in teams to gather data from a degraded campus habitat, come up with realistic proposals to restore the habitat, and develop strategies to fairly and equitably present their findings to the class.

PROGRAM GOAL	RELATED UNDERGRADUATE DEGREE LEVEL (UDLE)	LEARNING OUTCOMES AT COURSE LEVEL *(should be measurable)*	ILLUSTRATIVE EXAMPLES *Provide 1 or 2 for each program goal – showing alignment of assessment methods with degree level expectations Example should reference identified evaluation or assessment method in a specified course and show how student achieves UDLE*
	study, employment, community involvement and other activities requiring i) the exercise of personal responsibility and decision-making; and ii) working effectively with others b) Students will demonstrate the ability to identify and address their own learning needs in changing circumstances and to select an appropriate program of further study c) Students will demonstrate behaviour consistent with academic integrity and social responsibility.		In BIOL 4510H, students will work together to collate evidence in constructing a policy-based report under protocols associated with the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and the Ontario Species-at-Risk Act (SARA) Students will need to discuss various viewpoints and come to a consensus on final analysis and interpretation. Students will learn to work in a team and come to realize their common goal of conserving our environment. All students will be required to participate in a final presentation. Students will be assessed by their peers and by their instructor, and will be provided with written feedback.
<u>Program Goal 7</u> Effective conservation biologists understand how to detect and diagnose population declines and estimate probabilities of persistence.	**UDLE 3: Application of Knowledge** a) Students will demonstrate the ability to review, present, and interpret quantitative and qualitative information to: i) develop lines of argument; ii) make sound judgments in accordance with the major theories, concepts and methods of the subject(s) of study e) the ability to use a basic range of established techniques to: i) analyse information; ii) evaluate the appropriateness of different approaches to solving problems related to their area(s) of study; iii) propose solutions f) the ability to make use of scholarly reviews and primary sources **UDLE 5: Awareness of Limits of Knowledge**	• Students will calculate various metrics of biodiversity using data collected in the field. • Students will construct simple population models in R programming language and interpret their output. • Students will understand the risks faced by small populations and with the major drivers of species' endangerment and extinction. • Students will identify the means by which species' declines	Students will draw upon knowledge learned in MATH (statistics/probabilities courses) and BIOL 1020H, Foundations of Biodiversity to construct a simple population model. In BIOL 1020H and 2600H students will learn rudimentary R programming, an increasingly common programming tool. Students will understand how this tool can be used to interpret information, make sound judgments and support arguments. Examples include: ➢ General example - Students will be able to compare life histories of rapidly increasing and declining species using matrix population models. ➢ More specifically, in BIOL 4390H, Conservation Biology, students will use this tool to run population viability analysis. In BIOL 3600H, Ecological Genetics, students will use R programming to learn the impacts of small population sizes on genetic diversity, and learn how to calculate effective population sizes. Students will run computer simulations to further understand how to estimate the probability of declines or the probabilities of persistence in a specific species. Students will be required to analyze their data and will then use scientific literature to support their findings.

PROGRAM GOAL	RELATED UNDERGRADUATE DEGREE LEVEL (UDLE)	LEARNING OUTCOMES AT COURSE LEVEL *(should be measurable)*	ILLUSTRATIVE EXAMPLES *Provide 1 or 2 for each program goal – showing alignment of assessment methods with degree level expectations Example should reference identified evaluation or assessment method in a specified course and show how student achieves UDLE*
	Students will demonstrate: An understanding of the limits to their own knowledge and how this might influence their analyses and interpretations.	can be detected, diagnosed, and treated.	Students will select an endangered species and will write a research report, using scholarly reviews and peer-reviewed journals to explain the causes for population decline and the impact that a decline in this species might have on biodiversity. Students will examine any interactions between the species and their environment, population, community and ecosystem, and will use. Students, as part of this assignment, will be asked to identify strategies or approaches that may counterbalance the species decline and minimize any impact on the ecological balance. (BIOL 4510H).

Table 5B: Curriculum Mapping – BSc Conservation Biology – Placement and Co-op

Table 5B specifically shows how each course aligns with degree level expectations to fulfill all undergraduate degree level expectations

REQUIRED COURSES		RELATED UNDERGRADUATE DEGREE LEVEL EXPECTATIONS (UDLEs)					
		1	2	3	4	5	6
Course Code	Course Title	Depth & Breadth of Knowledge	Research & Scholarship	Level of Application of Knowledge	Professional Capacity/Autonomy	Level of Communication Skills	Awareness of Limits of Knowledge
BIOC 2100H	Communicating Conservation Biology 1		x			x	
BIOC 3100H	Communicating Conservation Biology 2				x	x	x
BIOL 1020H	Foundations of Biodiversity	x		x	x		x
BIOL 1030H	Foundation of Molecular and Cellular Biology	x		x			x
BIOL 2000H	Methods of Biological Inquiry		x	x	x	x	
BIOL 2050H	Introduction to Genetics	x	x	x		x	x
BIOL 2260H	Introductory Ecology	x		x			x

REQUIRED COURSES		RELATED UNDERGRADUATE DEGREE LEVEL EXPECTATIONS (UDLEs)					
		1	2	3	4	5	6
Course Code	Course Title	Depth & Breadth of Knowledge	Research & Scholarship	Level of Application of Knowledge	Professional Capacity/Autonomy	Level of Communication Skills	Awareness of Limits of Knowledge
BIOL 2600H	Evolution	x	x	x			x
BIOL 3170H BIOL 3190H	Plant Evolution and Diversity, or Wild Plants of Ontario	x	x	x			x
BIOL 3380H	Advanced Ecology		x	x		x	x
BIOL 3600H	Ecological Genetics	x					x
BIOL 4390H	Conservation Biology	x		x		x	
BIOL 4500H	Population Dynamics	x		x			x
BIOL 4510H	Species-at-Risk Biology and Policy	x		x	x	x	x
BIOL-PHYS 1060H	Physics for the Life Sciences	x		x			x
CHEM 1000H	Introductory Chemistry I	x	x	x		x	x
CHEM 1010H	Introductory Chemistry II	x		x			x
ERSC 1010H	Foundation of Environmental Sciences and Studies	x	x	x		x	x
ERSC 1020H	Cases in Environmental Science and Studies	x		x		x	
ERST 3250H	Introduction to Environmental Law	x			x	x	
GEOG-ERSC-BIOL 2080H	Natural Science Statistics	x		x			x
MATH 1051H or MATH 1005H	Non-calculus Statistics I: Elementary Probability & Statistics, or Applied Calculus	x					x
MATH 1052H or MATH 1550H	Non-calculus Statistics II: Elementary Statistical Methods, or Probability I: Introduction to Probability	x		x			X

REQUIRED COURSES		RELATED UNDERGRADUATE DEGREE LEVEL EXPECTATIONS (UDLEs)					
		1	2	3	4	5	6
Course Code	Course Title	Depth & Breadth of Knowledge	Research & Scholarship	Level of Application of Knowledge	Professional Capacity/Autonomy	Level of Communication Skills	Awareness of Limits of Knowledge
BIOL 4400Y	Placement in Conservation Biology				x	x	
BIOC 4100H	Advanced Communicating Conservation Biology I				x	x	
BIOC 4200H	Advanced Communicating Conservation Biology II				x	x	

5.1 APPROPRIATENESS OF THE DEGREE PROGRAM REQUIREMENTS, STRUCTURE, AND REGULATIONS TO MEET ASSOCIATED LEARNING OUTCOMES AND DEGREE LEVEL EXPECTATIONS

The program structure is designed to ensure students completing their degree have demonstrated the required learning to meet undergraduate degree level expectations, program goals, and course learning outcomes. The BSc Conservation Biology degree program must incorporate all degree level expectations as identified by the Ontario Council of Academic Vice Presidents and affirmed by Trent University's Senate Committee.

Program goals identify what students should know, understand and practice upon graduation. To ensure that successful graduates in the Conservation Biology program meet the undergraduate degree level expectations, each program goal was mapped to degree level expectations. Program goals also serve to be the foundation on which the course learning outcomes were developed. Course Learning Outcomes relate directly to program goals and describe the results to be achieved. Learning outcomes allow students to know what is expected of them and because they are measurable students know when they have been successful in achieving the specified outcome – knowledge, skill or ability.

UNDERGRADUATE DEGREE LEVEL EXPECTATIONS

The program has been developed based on the approved provincial undergraduate degree level expectations:

- UDLE 1: Depth and Breadth of Knowledge
- UDLE 2: Knowledge of Methodologies
- UDLE 3: Application of Knowledge
- UDLE 4: Communication Skills
- UDLE 5: Awareness of Limits of Knowledge
- UDLE 6: Autonomy and Professional Capacity

PROGRAM GOALS

Students are expected to achieve the following programs goals:

1. Effective conservation biologists know the theoretical principles of ecology and evolution.
2. Effective conservation biologists understand endangered species legislation and other regulatory instruments and international conventions to protect habitats and species.
3. Effective conservation biologists understand organismal biology, systems of classification, and the diversity of species' responses to environmental perturbations.
4. Effective conservation biologists understand the genetic basis for adaptation to modern environments.
5. Effective conservation biologists understand how best to communicate with scientists and non-specialists in promoting conservation of biodiversity.
6. Effective conservation biologists understand how to work with a team to promote mutual goals in conserving biodiversity.
7. Effective conservation biologists understand how to detect and diagnose population declines and estimate probabilities of persistence.

Graduates of the BSc in Conservation Biology will have the ability to think critically and independently, and to engage constructively in dealing with the ever-mounting issues faced by life on the planet. They will maintain curiosity about the living world, enthusiasm for its study, along with the knowledge and skills to carry out scientific studies. The program reflects the state-of-the-art curriculum; it provides students with the essential elements:

- An understanding of the underlying biological theory and concepts (UDLE 1: Depth & Breadth of Knowledge)
- Experience with field and lab techniques (UDLE 2: Knowledge of Methodologies)
- Experience in applying theory to real questions and situations (UDLE 3: Application of Knowledge)
- Experience in writing formal reports and reflective essays (UDLE 4: Communication Skills)
- Experience with presentations, in labs, seminars and workshops, both as individuals and as members of cooperative groups (UDLE 4: Communication Skills; UDLE 6: Autonomy and Professional Capacity)
- Opportunity for independent study in the form of reading courses, field courses, and thesis projects (UDLE 4: Communication Skills; UDLE 5: Awareness of Limits of Knowledge; UDLE 6: Autonomy and Professional Capacity)
- Opportunity for close interaction with faculty during and outside of class time (UDLE 6: Autonomy and Professional Capacity)
- Experiential opportunities through Co-op placements or Internships (UDLE 6: Autonomy and Professional Capacity)

In each year of study, students will be exposed to and become proficient in the methodologies appropriate for that stage in their education. In first and second year, students are provided with foundational courses that integrate the major themes of biology. In third and fourth year, students learn about advanced topics in conservation biology, including the issues in cutting-edge research. This knowledge will be reinforced through Co-op Work terms and Placements that allow students to translate the theory learned in class to address real-world situations.