

B.Sc. in Environmental and Conservation Sciences Class Schedule, Winter 2025

Black indicates UAlberta course code; blue indicates YukonU cross-list code. Full course names, descriptions, and registration numbers appear below table.

Time	Monday	Tuesday	Wednesday	Thursday	Friday
8:00					
8:30					
9:00		NS 390 (FNGA 240)	REN R 376 (RRMT 223)	REN R 376 (RRMT 223)	
9:30					
10:00					
10:30	ALES 291A (MATH 120)	ALES 391	REN R 491	ALES 291A (MATH 120)	MATH 200/RRMT 202
11:00					
11:30					
12:00					
12:30					
1:00	REN R 401B (BIOL 225) Ornithology	REN R 201 (GEOG 250)	REN R 401B (BIOL 225) Ornithology	REN R 201 (GEOG 250)	
1:30					
2:00					
2:30		REN R 466	REN R 364 (BIOL 230)	REN R 364 (BIOL 230)	
3:00					
3:30					
4:00	ALES 204 (COMM 204)	REN R 301 (ENST 201)	REN R 301 (ENVS 227)	REN R 307 (RRMT 238)	REN R 301 (ENVS 227)
4:30					
5:00					
5:30	MATH 200/RRMT 202 Tutorial/Lab		ALES 291 (CPSC 128)	REN R 201L (GEOG 250L)	ALES 291 (CPSC 128)
6:00		REN R 376L (RRMT 223L)			
6:30					
7:00					
7:30					
8:00					
8:30					
9:00					
9:30					
10:00					

ADDITIONAL COURSES (see course descriptions section below for more information):
REN R 465, Northern Exposures: This 3-credit winter field school will be offered as a week-long intensive Feb. 15-23.
Online asynchronous courses:
INT D 280 Mountain World
NS 115 Indigenous Peoples and Technoscience
NS 200 (cross-list with YukonU **HIST 140**)
REN R 301 Circumpolar World

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Bachelor of Science Courses:

Note that dual registration is required for these courses, with on-line registration through Bear Tracks for University of Alberta (Class Number in RED), and online registration through the Yukon University system (Course Registration Number, CRN, in BLUE).

ALES 204 – Professional Communication (cross-listed with YU COMM 193) (UA 71512; YU CRN TBD) Instructor: TBA

This course covers the principles of scientific and technical communication. Students will learn how to read and write a scientific paper; how to conduct literature searches; how to prepare a scientific talk; how to prepare a research poster; and other applications of various styles of professional reporting in natural resource conservation and management. In addition, the ethical issues related to scientific communication and scientific integrity will be discussed. Students who have previously taken YC's COMM 193 for transfer credit to U of Alberta may not take ALES 204 for credit. **Prerequisite:** Registration in the BSc ENCS Program. Yukon University ENGL 100 or equivalent strongly recommended.

ALES 291 - Math for the Life Sciences (cross-listed with YU MATH 120) (UA 70600; YU CRN 20165) Instructor: T. Topper

This course provides a survey of calculus and finite mathematics focusing on the concepts and modelling techniques used in the life sciences. It covers common families of functions (polynomial, logarithmic and exponential) and their derivatives and integrals, linear programming, simple and conditional probability and Bayes theorem, and network analysis. Topics are illustrated using problems drawn from the life sciences. Students who have previously taken YU's MATH 120 for transfer credit to U of Alberta may not take ALES 291 Math for the Life Sciences for credit.

Prerequisite: Registration in the BSc ENCS Program, and Foundations of Mathematics 12, Pre-calculus 12, MATH 060, or equivalent. **NOTE: that this course is listed as ALES 291A in the YukonU system.**

ALES 291 – Object-Oriented Programming (register in YU CPSC 128 section 002) (UA 71559; YU CRN 20200) Instructor: K. Chatfield-Reed

The goal of CPSC 128 is to introduce the student to the design and implementation of object-oriented software. To this end it covers: techniques, methods, and tools for systematic development and maintenance of software systems and documentation; basic algorithms and data structures; and fundamental concepts of object-oriented programming. The bulk of the course is spent practicing program design as new elements are added to the student's knowledge of an OOP language. Good programming practices are emphasized throughout, including: top-down design, modularization, code re-use, debugging techniques, and creating useful documentation.

Prerequisite: Math 11. While no previous programming experience is required, any such experience is helpful. This course may be an option for students who require a Free Elective or have room for a 100-level Approved Program Elective (APE) in their program. Please see an ENCS Program advisor for more information on registering in this course.

ALES 391 – Critical Thinking and Advanced Communication in Science (UA 70601; YU CRN 20166) Instructor: K. Aitken

This course will focus on the skills necessary to successfully generate, communicate, and evaluate scientific information. Students will learn about approaches to scientific inquiry, how to develop scientific questions and explanations, and practice reading and thinking critically about science. Developing competency in scientific writing will form a large component of the course. Students will learn the importance and purpose of scientific writing, compare and critique journals in their field of study, organize ideas in a structured way to prepare for writing, critically review and edit articles and manuscripts, and understand what is needed to prepare a well-written journal article, report or thesis. This course is used to fill the Critical Thinking and Advanced Communication APE in the B.Sc. ENCS Northern Systems Major. **Prerequisite:** Registration in BSc ENCS Program. UAlberta ALES 204, YukonU's COMM 193/204, or an equivalent introductory communication course is recommended.

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NS 115 Indigenous Peoples and Technoscience (UA 74815; YU CRN: NA) Instructor: TBA - ONLINE ASYNCHRONOUS (delivered from Edmonton)

This course introduces students to the long and complicated relationships between science and technology fields, broader dynamics of colonialism, and increasing demands for Indigenous governance of the sciences and technologies that affect them. **This course is offered fully online asynchronously** through UAlberta's eClass system. This course may be an option for students who require a Free Elective or have room for a 100-level Approved Program Elective (APE) in their program. Please see an ENCS Program advisor for more information on registering in this course.

NS 200 - cross-listed with YU HIST 140 History of Yukon First Nations and Self-gov't (UA 71231; YU CRN: 20090) Instructor: V. Castillo - ONLINE ASYNCHRONOUS

This course examines Yukon First Nations history, culture and governance. Topics covered include pre-contact cultures of Yukon, subsistence economies, social and political organizations, cultural expressions, and cultural protocols. First Nations' responses to colonialism within the context of major contact and post-contact events are analyzed. Particular emphasis is placed on the history of Yukon land claims and the emergence of First Nations self-governments. **This course is offered fully online asynchronously** through YukonU's Moodle system. Students who have previously taken YU's HIST 140 or FNST 100 for transfer credit to U of Alberta may not take NS 200 for credit. **Prerequisite:** Yukon University HIST 140 and registration in the BSc ENCS Program.

NS 390 - cross-listed with YU FNGA 240 – Indigenous Peoples and Research (UA 78805; YU CRN 20041) Instructor: D. Silas

This course is designed to introduce students to the relationships between research, colonialism and Indigenous Peoples. Students will develop skills and approaches for understanding their own positionality and how it affects their current or future research relationships with Indigenous Peoples. Content will explore approaches to research, research ethics, and Indigenous methodologies, and introduce students to qualitative and quantitative research methods. The intent of the course is to prepare students to lead and/or participate in responsible, community-based research projects with Indigenous communities, organizations, governments and Nations. Course requires manual enrollment – please contact an ENCS Program advisor for help with registration. Students who have previously taken YU's FNGA 240 for transfer credit to U of Alberta may not take NS 390 for credit. NOTE: Bear Tracks lists a lab for this course in the UAlberta registration system – please disregard that (there is no lab in the Yukon offering). **Prerequisite:** Registration in BSc ENCS Program. **This course requires manual enrolment in Bear Tracks by a program advisor.**

REN R 201 – Introduction to Geomatic Techniques (cross-listed with YU GEOG 250) (UA 70207; YU CRN 20228) Instructors: C. Laurent, T. Howatt

This course introduces the practical uses of maps and remote sensing as tools in the management of renewable resources, including an introduction to computer-based geographic information systems. Participants will use a commercial GIS software product (ArcGIS) and gain a reasonable proficiency with that package. When registering at Yukon University, students must also register in RENR 201L (YU CRN 20229), the mandatory lab and tutorial component of this course. Students who have previously taken YU's GEOG 250 for transfer credit to U of Alberta may not take REN R 201 for credit. **Prerequisite:** Strong computer skills (Windows environment), basic understanding of mapped data and simple statistics, and registration in the BSc ENCS Program.

REN R 301 Topics in Renewable Resources “Environmental Ethics” - cross-listed with YukonU ENST 201 (UA 77616; YU CRN 20087) Instructor: M. Cameron

A philosophical investigation of the moral and conceptual dimensions of environmental problems. Students who have previously taken YukonU's ENST 201 for transfer credit to U of Alberta may not take this section of REN R 301 for credit. May be used as a substitution for REN R 260 on approval from B.Sc. ENCS advisor. **Prerequisite:** Registration in BSc ENCS Program.

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REN R 301 Topics in Renewable Resources “Watershed Stewardship” - register in YU ENVS 227 section 002 (UA 77752; YU CRN 20213) Instructor: T. Howatt

The course has two over-arching goals. One is to learn ways to foster holistic connections between people, communities and watersheds, connections based on more than science. The second is to help facilitate and enhance, using both science and indigenous knowledge, the capacity of Yukon communities and First Nations to develop and implement plans for source water protection and watershed stewardship. The course aims to increase community understanding of water management principles and promote acceptance of community-based watershed stewardship. The course encapsulates multiple perspectives and will include local indigenous knowledge and western science (i.e., hydrology, biology), in order to create a more comprehensive approach towards drinking water security and safety and overall watershed stewardship. Students who have previously taken YU’s ENVS 227 for transfer credit to U of Alberta may not take this section of REN R 301 for credit. **Prerequisite:** Registration in the BSc ENCS program.

REN R 301 Topics in Renewable Resources – Introduction to the Circumpolar World (UA 77615; YU CRN 20096) Instructor: A. Graham - ONLINE ASYNCHRONOUS

Introduces students to the landscape, peoples and issues of the region. It examines the geography, biological and physical systems of the Subarctic and Arctic, then turns to the aboriginal and contemporary peoples of the region. It also surveys some of the particular issues facing the region including: climate change, economics, and political climate. **NOTE: This course is fully online asynchronously** through YukonU and University of the Arctic. Students who have previously taken YU’s NOST 101 for transfer credit to U of Alberta may not take REN R 301 Circumpolar World for credit. **Prerequisite:** Registration in the BSc ENCS program.

REN R 301 Topics in Renewable Resources “Mental Wellness in the North” – register in YU NOST 229 section 003 (UA 79442; YU CRN 20298) Instructor: A. Roebuck

This is a new course, under development, that looks at the determinants of mental wellness in the North. As a pilot, student feedback will be sought during and after the course. Course topics include perspectives toward mental health and wellness; aspects of mental wellness broadly, including causal factors, treatments, impacts, and short- and long-term outcomes; differences in Northern communities that set them apart from other regions of Canada and the World; current challenges around mental wellness in the North; controversial issues related to mental wellness; application of critical thinking skills to aspects of mental wellness. More information on the pilot course, including a syllabus from the first offering in winter 2023, is available at <https://www.yukonu.ca/programs/courses/nost-229>. **Prerequisite:** Registration in the BSc ENCS program.

REN R 307 - Environmental Assessment Principles and Methods (cross-listed with YU RRMT 238) (UA 77754; YU CRN 20231) Instructor: R. Mennell

Provides an overview of environmental protection in Canada and then focuses on the assessment and mitigation of impacts through environmental impact assessments. Students who have already completed RRMT 238 may not take REN R 307 for credit. **Prerequisite:** Registration in the BSc in Environmental and Conservation Sciences program.

REN R 364 – Principles of Managing Natural Diversity (cross-listed with YU BIOL 230) (UA 74693; YU CRN 20232) Instructor: T. Stehelin

Introduction to the theoretical foundation for conservation science. Elements of population, community and landscape ecology will be reviewed, and their application to real-world challenges discussed. Objective is to provide students with the scientific tools to evaluate and develop conservation strategies for maintaining diversity in human-altered systems. Ethical and philosophical aspects of the sociopolitical arena in which conservation decisions are made and implemented are also explored. NOTE: Bear Tracks lists a lab for this course in the UAlberta registration system – please disregard that (there is no lab in the Yukon offering). **Prerequisite:** Registration in the BSc in Environmental and Conservation Sciences program, and U of Alberta BIOL 108, Yukon University BIOL 101/102, or an equivalent first-year biology course (or permission of ENCS Advisor).

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REN R 376 – Wildlife Ecology and Management (lecture cross-listed with RRMT 223) (UA 77755; YU CRN 20233) Instructor: T. Jung

Participants examine aspects of wildlife biology and the technical and societal context within which wildlife are managed in Northern Canada. Students who have already taken YU's RRMT 223 for transfer credit to U of Alberta may not take REN R 376 for credit. **Students must also register in REN R 376L CRN 20234** in the YukonU system. **Prerequisite:** YukonU BIOL 101/102, U of A BIOL 108, or equivalent first-year biology course, and registration in the BSc ENCS program.

REN R 401 Topics in Renewable Resources - Individual Study (UA 70602; YU CRN 20236)

Directed study in the multiple aspects of renewable resources. Please see an ENCS Program advisor for more information on registering in an Individual Study course. **Prerequisite:** Registration in the BSc ENCS program.

~~**REN R 401 Interdisciplinary Issues in Circumpolar Studies (UA 77757; YU CRN 20237) Instructor:** TBD **CANCELLED**~~

~~This course will engage with a range of issues in Arctic environments, communities, and economies. We will use interdisciplinary and transdisciplinary lenses to examine the complexities involved in Arctic research and governance broadly and the need to draw connections between a range of knowledge systems, actors, and academic disciplines to develop understandings that reflect the lived realities of Arctic communities and changing nature of Arctic environments. The course will draw from a variety of written and visual materials and rely on highly participatory facilitated class discussions to explore topics. Students will be asked to think about the narratives that frame circumpolar issues and potential frameworks to address decision-making into the future.~~

REN R 401B – Northern Avian Ecology (cross-listed with YU BIOL 225 Ornithology) (UA 77756; YU CRN 20235) Instructor: K. Aitken

This course will provide a practical introduction to the subject of ornithology, the biology of birds. Students will learn about 1) the evolution of birds and the incredible array of avian morphological, physiological, and behavioral adaptations, 2) current research and issues in avian ecology and conservation, 3) methods used by researchers in the field of avian biology, and 4) identification of birds by sight and sound, with an emphasis on species found in the Yukon. Students who have already completed YU BIOL 225 may not take REN R 401B for credit. **Prerequisites:** Registration in the BSc in Environmental and Conservation Sciences program, and U of Alberta BIOL 108, Yukon University BIOL 101/102, or an equivalent first-year biology course (or permission of the instructor).

REN R 465 - Northern Exposures Field School (UA 74172; YU CRN TBD) Instructor: G. Rivest

This course will engage students from Edmonton and from the Yukon to explore the natural and cultural history of the Yukon, discuss environmental, social and economic challenges in this region, learn about winter sampling methods, and identify ecologically and culturally appropriate research and management approaches for northern systems. **Prerequisite:** 3rd year university standing and registration in the BSc ENCS Program, and permission of the ENCS program advisor. **Additional course fees apply, in addition to tuition.** Course runs Feb. 15-23, 2025, with additional reading assigned before the course start, and an assignment due afterwards. For more information, contact Gabriel Rivest: rivest@ualberta.ca.

REN R 466 - Climate Change and the Circumpolar World (UA 77763; YU CRN 20238) Instructor: M. Douglas

Current and projected impacts of climate change on the circumpolar north, including the land, its biota, northern communities, and drivers that shape these interactions. This course begins with an overview of climate change as an issue, its detection, historical evidence and scientific basis, and then examines potential impacts of change on northern environments and socioeconomic systems. **Prerequisite:** Registration in the BSc ENCS Program.

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REN R 491 – Land-use Planning in Canada’s North, Northern Systems Major Capstone course (UA 70163; YU CRN 20239) Instructors: K. Lisgo

Contemporary approaches to land-use planning applied to northern systems in Canada, addressing the integration of social, environmental and economic values, and maintenance of ecosystem integrity through proactive measures. **Prerequisites:** *81 credits at the university level in the B.Sc. ENCS Northern Systems Major, successful completion of REN R 365, or permission of an ENCS program advisor, and registration in the BSc ENCS Program. Completion of REN R 201 or a similar introductory course in GIS is strongly recommended.

Other Courses Offered by Yukon University (minimum grade of C- required for transfer to UAlberta):

MATH 200 – Statistics for Physical and Life Sciences (YU CRN 20249) Instructor: D. Heilig

This course provides a comprehensive introduction to statistical principles and methods. At the end of the course, students should be able to utilize statistical techniques to characterize and assess research datasets and critically evaluate statistical work done by others. Topics include descriptive statistics, elementary concepts in probability, correlation and regression, sampling, estimation and hypothesis testing (including one-sample, two-sample, ANOVA, and chi-squared). This course is directed towards undergraduate science and engineering students for which fluency in basic statistical methods can greatly contribute to the depth of their core program. NOTE: This course may be used to fill the requirement for UAlberta STAT 151; it or another introductory statistics course (e.g., YukonU MATH 105 or RRMT 202, below) is the required prerequisite for RENR 480. Prerequisite: MATH 100 (Single Variable Calculus I) or MATH 120/ALES 291A Math for the Life Sciences. Students needing an intro stats course and without the necessary prerequisites should instead register in RRMT 202.

RRMT 202 – Statistics for Biological Sciences (YU CRN 20240) Instructor: D. Heilig

Participants of the course learn, with reference to biological and environmental examples: how to describe central tendency and variability of data; how to optimize the collection of data; and how to apply basic parametric and non-parametric statistical tests. Students must also register in RRMT 202L, the mandatory lab component of this course. NOTE: This course may be used to fill the requirement for UAlberta STAT 151; it or another introductory statistics course (e.g., YukonU MATH 105 or MATH 200, above) is the required prerequisite for RENR 480. **Students must also register in the mandatory lab component of the course, RRMT 202L (YU CRN 20241).**