

## B.Sc. in Environmental and Conservation Sciences Class Schedule, Winter 2024

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		REN R 301 section 002 (ENST 201)		REN R 301 section 002 (ENST 201)		
9:30						
10:00		NS 390 (FNGA 240)				
10:30	ALES 291A (MATH 120)		ALES 391	ALES 291A (MATH 120)	ALES 291A (MATH 120)	REN R 301 (GEOL 301)
11:00						
11:30						
12:00						
12:30						
1:00	REN R 401B (BIOL 225)	REN R 364 (BIOL 230)	REN R 401B (BIOL 225)	REN R 301 (GEOL 301)	REN R 364 (BIOL 230)	REN R 301L (GEOL 301L)
1:30						
2:00						
2:30	AREC 365	REN R 491	AREC 365	REN R 491		
3:00						
3:30						
4:00	ALES 204 (COMM 204)	REN R 301 section 003 (ENVS 227)	ALES 204 (COMM 204)	REN R 301 section 003 (ENVS 227)		
4:30						
5:00						
5:30						
6:00	REN R 201 (GEOG 250)		REN R 201L (GEOG 250L)			
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. 16-23.  
**Online asynchronous courses:**  
**INT D 280** Mountain World  
**NS 115** Indigenous Peoples and Technoscience  
**NS 200** (cross-list with YukonU **HIST 140**)  
**University of the Arctic courses** - REN R 301 Circumpolar World, REN R 401 Contemporary Issues of the Circumpolar World II, REN R 401 Lands & Environments of the Circumpolar World II, REN R 401 Peoples & Cultures of the Circumpolar World II

Please see YukonU registration system for room numbers (subject to change before start of term)

## B.Sc. in Environmental and Conservation Sciences Class Schedule, Winter 2024

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

### 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 manual registration through Authorization to Register forms at Yukon University (see Program Advisor).

#### **ALES 204 – Professional Communication (cross-listed with YU COMM 193) (UA 11744; YU CRN TBA) Instructor:** T. Jung

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 11794; YU CRN 20168) 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. When registering in the YukonU system, note that the course code is ALES 291A.

#### **ALES 391 – Critical Thinking and Advanced Communication in Science (UA 10686; YU CRN 20169) 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.

#### **AREC 365 – Natural Resource and Environmental Economics (UA 17953; YU CRN 20170) Instructors:** D. Parker, T. Belansky

Economics of natural resources; resource scarcity, conservation, sustainability, water resource issues, fisheries, forestry, agriculture, recycling, property and tenure institutions and public resource policy. **Prerequisite:** U of Alberta ECON 101, YukonU ECON 100, or an equivalent Introduction to Microeconomics course, and registration in the BSc ENCS Program.

#### **INT D 280 – The Mountain World: Intro to Interdisciplinary Mountain Studies (UA 15222; YU CRN TBA) Instructor:** Z. Robinson – **ONLINE ASYNCHRONOUS**

An interdisciplinary study of the physical and human dimensions of mountain environments. Content includes the physical (glaciers, climate, geology, etc.), biological (flora, fauna, ecology, etc.), physiological (human bodies at altitude, performance, sport, etc.), and cultural (societies, literature's, histories, etc.) dimensions of these unique regions, as well as a critical analysis of the processes of change and influence shaping local and regional mountain environments around the globe, past and present. **This course is offered fully online** through UAlberta's eClass system.

## B.Sc. in Environmental and Conservation Sciences Class Schedule, Winter 2024

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

Exams will be written at Yukon University's Ayamdigut (Whitehorse) campus. This course may be an option for students who require a Free Elective or have room for a 200-level Approved Program Elective (APE) in their program. Please see an ENCS Program advisor for more information on registering in this course.

### **NS 115 Indigenous Peoples and Technoscience (UA 15444; YU CRN: TBA) Instructor: TBA - ONLINE ASYNCHRONOUS**

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 11387; YU CRN: 20147) Instructor: G. Staveley - 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 11388; YU CRN 20172) Instructor: TBA**

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 110 Natural Resource Measurement (cross-list with RRMT 125 Renewable Resources Measurements) (UA 10200; YU CRN 20219) Instructor: S. Biggin-Pound**

Students apply scientific and mathematical principles and field techniques to the collection and presentation of data used in the management of renewable resources. This is a 10-day field course that runs from 23 Apr – 4 May 2024. **Additional field course fee: \$200.** Students who have received transfer credit towards REN R 110 from YU or from another institution may not take RRMT 125 for program credit. **Prerequisite:** Permission of an ENCS program advisor and the Renewable Resources Management Program Coordinator.

### **REN R 201 – Introduction to Geomatic Techniques (cross-listed with YU GEOG 250) (UA 10240; YU CRN 20211) 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

## B.Sc. in Environmental and Conservation Sciences Class Schedule, Winter 2024

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

register in RENR 201L (YU CRN 20212), 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 section 001 Topics in Renewable Resources "Introduction to the Circumpolar World" – cross-listed with YukonU NOST 101 (UA 750-10242; YU CRN 20125) 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 section 002 Topics in Renewable Resources "Environmental Ethics" - cross-listed with YukonU ENST 201 (UA 751-19536; YU CRN 20149) 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. **Prerequisite:** Registration in BSc ENCS Program.

### **REN R 301 section 003 Topics in Renewable Resources "Source-water Protection and Watershed Stewardship" - cross-listed with YukonU ENVS 227 (UA 753-19610; YU CRN 20222)**

**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/GEOL 301 Hydrogeology (UA REN R 301 section 752-19537; YU GEOL 301 section CRN 20207) Instructor: M. Samolczyk**

This course examines the nature and movement of groundwater in subsurface geologic materials. Students are introduced to the concepts and principles governing groundwater flow, as well as the geologic and hydraulic properties of groundwater aquifers. Surface-groundwater interactions are addressed within the context of the larger hydrologic cycle and water budgets on regional to site scales. Students learn how to quantify the three-dimensional movement of groundwater in the subsurface and use data derived from both their own hydrogeologic testing, industry reports and publicly available datasets to define aquifer characteristics (water chemistry, storage, flow rates, etc.). An introduction to basic hydrogeologic modeling and hydrogeologic software packages is provided. **NOTE:** In the YukonU system, students will register in a non-fee section of GEOL 301; in Bear Tracks, students will register in a section of REN R 301. Students must also register in GEOL 301L section 002 (YU CRN 20208), the mandatory lab component of the course, in the YukonU system. This course may be used as an APE or free elective in the ENCS program, or as a substitution for a core course on approval of the program advisor. **Students will be assessed a lab/field fee of \$60 in the YukonU system.** **Prerequisites:** YukonU MATH 120 or MATH 100, or equivalent first-year Calculus course; one of SOIL 210/RENR 210, RRMT 239/RENR 250/RENR 350, GEOL 105, GEOL 106, or GEOG 102 (or equivalents from other institutions); and 12 additional credits (4 courses) in earth sciences, physical geography, or environmental science (subject codes GEOL, GEOG, ENVS, RENR, or RRMT); OR permission of the instructor.

## B.Sc. in Environmental and Conservation Sciences Class Schedule, Winter 2024

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

### **REN R 364 – Principles of Managing Natural Diversity (cross-listed with YU BIOL 230) (UA 15266; YU CRN 20220) 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).

### **REN R 401 Topics in Renewable Resources - Individual Study (UA 754-19616; YU CRN 20215)**

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 Contemporary Issues of the Circumpolar World II (cross-listed with YU NOST 325) (UA 751-10688; YU CRN 20150) - ONLINE ASYNCHRONOUS (delivered from Trent University)**

In this course students will deal with questions relating to governance and politics, social issues, education and knowledge systems, and global issues in the North. This course will provide students with an appreciation of the main challenges confronting the peoples and communities of the world's northern regions. It will be beneficial to those students attempting to better understand the current questions facing the North as well as to those planning to pursue advanced studies about the region. More information on this course is available [here](#). **Please note that this course is online asynchronous** via Trent University and is offered through a partnership with University of the Arctic. **Prerequisite:** Yukon University NOST 101 or permission of the U Arctic coordinator, and registration in the BSc ENCS program.

### **REN R 401 Lands and Environments of the Circumpolar World II (cross-listed with YU NOST 327) (UA 750-10687; YU CRN 20151) - ONLINE ASYNCHRONOUS (delivered from Trent University)**

The course deals with the impacts of natural and physical change on the peoples and conditions of the Circumpolar North. The course concentrates on three major fields for scientific study: (1) climate change, (2) natural resources, and (3) health and environment. Emphasis is given to the challenges of sustainability in the North, and to the need for long-term proper stewardship. More information on this course is available [here](#). **Please note that this course is online asynchronous** via Trent University and is offered through a partnership with University of the Arctic. **Prerequisite:** Yukon University NOST 101 and NOST 326 (Lands & Environments I), and registration in the BSc ENCS program.

### **REN R 401 Peoples and Cultures of the Circumpolar North II (cross-listed with YU NOST 329) (UA 752-10689; YU CRN 20152) - ONLINE ASYNCHRONOUS (delivered from Trent University)**

This course continues the examination of the human environment and experience of the Circumpolar North. It aims to promote an integrated and multidisciplinary understanding of the circumpolar peoples and their adaptations and contribution to social, economic, political and environmental changes. The complex issues around the revival of northern cultures and languages will be introduced, and students will be prepared to think about how these issues apply in their home community. More information on this course is available [here](#). **Please note that this course is online asynchronous** and is offered via Trent University through a partnership with University of the Arctic. **Prerequisite:** Yukon University NOST 101 or permission of the U Arctic coordinator, and registration in the BSc ENCS program.

## B.Sc. in Environmental and Conservation Sciences Class Schedule, Winter 2024

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

### **REN R 401B – Northern Avian Ecology (cross-listed with YU BIOL 225 Ornithology) (UA 753-11351; YU CRN 20214) 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 14732; YU CRN 20231) Instructors:** P. McCarney, 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:** 3<sup>rd</sup> year university standing and registration in the BSc ENCS Program, and permission of the ENCS program advisor. **Additional course fees apply.** Course runs Feb. 17-26, 2024, with additional reading assigned before the course start, and an assignment due afterwards. For more information, contact Gabriel Rivest: [rivest@ualberta.ca](mailto:rivest@ualberta.ca). NOTE: This course requires manual enrolment by a program advisor.

### **REN R 491 – Land-use Planning in Canada’s North, Northern Systems Major Capstone course (UA 10192; YU CRN 20216) Instructors:** J. Gonet, 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 REN R 366, or permission of an ENCS program advisor, and registration in the BSc ENCS Program.