

B.Sc. in Environmental and Conservation Sciences Class Schedule, Winter 2022

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	ALES 291A (MATH 120)		ALES 291A (MATH 120)	NS 390 (FNGA 240)	ALES 291A (MATH 120)
9:30	A2204		A2204	A2603 (and by Zoom)	A2204
10:00					
10:30	AREC 365	ALES 391	AREC 365		
11:00	A2204	A2202	A2204		
11:30					
12:00					
12:30					
1:00	REN R 366 (NOTE this will shift to 12-12:50 with time change in AB on Mar 13) A2402	REN R 401B (BIOL 225)	REN R 366 (NOTE this will shift to 12-12:50 with time change in AB on Mar 13) A2402	REN R 401B (BIOL 225)	REN R 366 (NOTE this will shift to 12-12:50 with time change in AB on Mar 13) A2402
1:30		A2202		A2202	
2:00					
2:30	REN R 364 (BIOL 230)	REN R 491	REN R 364 (BIOL 230)	REN R 491	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. 19-26, 2022. 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
3:00	A2603	A2603	A2603	A2603	
3:30					
4:00	ALES 204 (COMM 204)		ALES 204 (COMM 204)		
4:30	A2101	REN R 260 (ENST 201)	A2702	REN R 260 (ENST 201)	
5:00		A2601		A2601	
5:30					
6:00	REN R 201 (GEOG 250)	MATH 105	REN R 201L (GEOG 250L)		
6:30	C1530	A2103	A2702		
7:00					
7:30					
8:00					
8:30					
9:00					
9:30					
10:00					

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

ALES 204 – Professional Communication (cross-listed with YU COMM 193) (UA 67144; YU CRN 20207) Instructor: S. Biggin-Pound

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:** Yukon College ENGL 100 or equivalent strongly recommended and registration in the BSc ENCS Program.

ALES 291 - Math for the Life Sciences (cross-listed with YU MATH 120) (UA 67254; YU CRN 20208) 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.

ALES 391 – Critical Thinking and Advanced Communication in Science (UA 62464; YU CRN 20075) 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:** UAlberta ALES 204 or YukonU's COMM 193/204 is recommended. Registration in BSc ENCS Program.

AREC 365 – Natural Resource and Environmental Economics (UA 60770; YU CRN 20076) Instructors: D. Parker, P. McCarney

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.

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INT D 280 – The Mountain World: Intro to Interdisciplinary Mountain Studies in (UA 75558; YU CRN 20210) 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. 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 76237; YU CRN: 20160) Instructor: J. Kolopenuk - 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 65262; YU CRN: 20204) 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 65264; YU CRN 20178) Instructor: TBD

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. **Prerequisite:** Registration in BSc ENCS Program.

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REN R 201 – Introduction to Geomatic Techniques (cross-listed with YU GEOG 250) (UA 60936; YU CRN 20219) Instructor: C. Laurent

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 20220), 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 260 - cross-listed with YukonU ENST 201– Environmental Ethics (UA 77465; YU CRN 20202) Instructor: M. Cameron

A philosophical investigation of the moral and conceptual dimensions of environmental problems. Students who have previously taken YukonU's ENST 200 or ENST 201 for transfer credit to U of Alberta may not take REN R 260 for credit. **Prerequisite:** Registration in BSc ENCS Program.

REN R 301 Topics in Renewable Resources – Introduction to the Circumpolar World (UA 60940; YU CRN 20238) 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 364 – Principles of Managing Natural Diversity (cross-listed with YU BIOL 230) (UA 75780; YU CRN 20221) 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. **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 366 – Restoration Ecology (UA 65210; YU CRN 20102) Instructor: J. Karst (via Zoom from Edmonton); **TA:** A. Sheppard

Principles and practices of restoring ecosystem structure, function and biodiversity after natural or anthropogenic disturbances. The course focuses on ecological theory and how to apply it to ecological restoration. Topics include landscape processes and connectivity, soil-plant processes, techniques, philosophy and ethics and societal aspects of ecological restoration. PLEASE NOTE: **Because of the spring time change in March, the time of this class will shift back by one hour after March 13.** **Prerequisite:** Registration in the BSc in Environmental and Conservation Sciences program, and U of Alberta BIOL 208, Yukon University BIOL 220 or an equivalent 2nd-year introductory ecology course.

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REN R 401 Topics in Renewable Resources - Individual Study (UA 60930; YU CRN 20104)

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 62468; YU CRN 20239) - ONLINE ASYNCHRONOUS

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 62466; YU CRN 20240) - ONLINE ASYNCHRONOUS

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 62470; YU CRN 20241) - ONLINE ASYNCHRONOUS

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.

REN R 401B – Northern Avian Ecology (cross-listed with YU BIOL 225 Ornithology) (UA 65128; YU CRN 20222) 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).

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REN R 465 - Northern Exposures Field School (UA 74566; YU CRN TBD) 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: 3rd year university standing and registration in the BSc ENCS Program, and permission of the ENCS program advisor. **Additional course fees apply.** Course runs Feb. 19-26, 2022, with additional reading assigned before the course start, and an assignment due afterwards. For more information, contact Gabriel Rivest: rivest@ualberta.ca.

REN R 491 – Land-use Planning in Canada’s North, Northern Systems Major Capstone course (UA 60802; YU CRN 20108) Instructors: K. Lisgo, J. Gonet

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.

Other Courses Offered by Yukon University:

MATH 105 Introductory Statistics (YU CRN 20206) Instructor: A. Roebuck

This is a first course in Statistics. The objective of the course is for students to gain a good intuitive understanding of statistical principles and methods. At the end of the course, students should be able to use elementary statistical techniques, and to critically assess statistical work done by others. Topics include descriptive statistics (histograms, mean, median, mode, standard deviation, normal approximations and measurement errors) correlation and regression probability chance variability sampling and hypothesis testing (including one-sample, two-sample, ANOVA, and chi-squared). The course is not intended to be a mathematical treatment of statistics, but a good knowledge of high school algebra is critical. This course may be used to fill the requirement for STAT 141/151 in the B.Sc. ENCS program. **Prerequisite(s):** MATH 11. MATH 12 or YukonU MATH 130 strongly recommended.

RRMT 125 Renewable Resources Measurements (YU CRN 20105) 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 25 Apr – 6 May, 2022. Additional field course fee: \$200. This course may be used to fill the requirement for REN R 110 in the B.Sc. ENCS program. 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.