

B.Sc. in Environmental and Conservation Sciences Class Schedule, Winter 2021

| Time | Monday | | | Tuesday | | Wednesday | | | Thursday | | | Friday | | | | |
|-------|--|--|----------|----------------------|-------------------------------|----------------------|--|---|-----------|---------------------|--|--|--|---|--|--|
| 8:00 | REN R 427 | | | REN R 466 (GEOG 290) | | REN R 427 | | | | | | | | | | |
| 8:30 | | | | | | | | | | | | | | | | |
| 9:00 | | | | | | | | | | | | | | | | |
| 9:30 | | | | | | | | | | | | | | | | |
| 10:00 | | | | | | | | | | | | | | | | |
| 10:30 | ALES 291 (MATH 120) | | | REN R 376 (RRMT 223) | | ALES 291 (MATH 120) | | | REN R 491 | | | ALES 291 (MATH 120) | | | | |
| 11:00 | | | | | | | | | | | | | | | | |
| 11:30 | | | | | | | | | | | | | | | | |
| 12:00 | | | | | | | | | | | | | | | | |
| 12:30 | REN R 366 (due to time change in AB in March, this will shift by one hour after 14 Mar) | | | REN R 364 (BIOL 230) | | REN R 491 | | REN R 366 (due to time change in AB in March, this will shift by one hour after 14 Mar) | | ALES 204 (COMM 204) | | REN R 401B (BIOL 225) (5 Thursday sessions will be delivered on campus in Whitehorse; these are not mandatory but are strongly recommended; exact dates will be announced at the start of term) | | REN R 366 (due to time change in AB in March, this will shift by one hour after 14 Mar) | | |
| 1:00 | | | | | | | | | | | | | | | | |
| 1:30 | | | | | | | | | | | | | | | | |
| 2:00 | | | | | | | | | | | | | | | | |
| 2:30 | | | | ALES 391 | | | | | | | | <div>ADDITIONAL COURSES: REN R 465, Northern Exposures: TENTATIVE This winter field school will be offered as a week-long intensive, Feb. 20-28, 2021. (*3 credit) Additional fees apply. R SOC 375, NS 200: delivery will be online asynchronous (no scheduled meeting times) Online courses that fill the Circumpolar Studies APE are available through University of the Arctic (see descriptions below).</div> | | | | |
| 3:00 | | | | | | | | | | | | | | | | |
| 3:30 | REN R 307 (RRMT 238) | | | | | REN R 307 (RRMT 238) | | | | | | | | | | |
| 4:00 | | | | | | | | | | | | | | | | |
| 4:30 | | | MATH 105 | | | | | | MATH 105 | | | | | | | |
| 5:00 | REN R 201 (GEOG 250) | | | | | | | | | | | | | | | |
| 5:30 | | | | | | | | | | | | | | | | |
| 6:00 | | | | | | | | | | | | | | | | |
| 6:30 | | | | | REN R 401 Beringia (BIOL 290) | | | | AREC 365 | | | | | | | |
| 7:00 | | | | | | | | | | | | | | | | |
| 7:30 | | | | | | | | | | | | | | | | |
| 8:00 | | | | | | | | | | | | | | | | |
| 8:30 | | | | | | | | | | | | | | | | |
| 9:00 | <div>Black indicates University of Alberta course code Blue indicates Yukon University cross-listing. Full course names, descriptions and registration numbers appear below table.</div> | | | | | | | | | | | | | | | |
| 9:30 | | | | | | | | | | | | | | | | |
| 10:00 | | | | | | | | | | | | | | | | |

B.Sc. in Environmental and Conservation Sciences Class Schedule, Winter 2021

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 YukonU COMM 204, formerly COMM 193) (UA 90406; YU CRN 20187) 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 YukonU's COMM 193/204 for transfer credit to U of Alberta may not take ALES 204 for credit. **Prerequisite:** Yukon University ENGL 100 or equivalent strongly recommended and registration in the BSc ENCS Program.

ALES 291 - Math for the Life Sciences (cross-listed with YukonU MATH 120) (UA 90534; YU CRN 20189) 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 YukonU'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 43565; YU CRN 20190) 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:** ALES 204 or YukonU's COMM 193/204 is recommended. Registration in BSc ENCS Program.

AREC 365 – Natural Resource and Environmental Economics (UA 42453; YU CRN 20191) Instructor: D. Parker

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, Yukon University ECON 100, or an equivalent Introduction to Microeconomics course, and registration in the BSc ENCS Program.

NS 200 - cross-listed with YukonU HIST 140 History of Yukon First Nations and Self-gov't (UA 45309; YU CRN 20180) Instructor: V. Castillo

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. **NOTE:** This course has two delivery options: a classroom-based section OR a fully-online section. Students who have previously taken YukonU's HIST 140 or FNST 100 for transfer credit to U of Alberta may not take NS 200 for credit. **Prerequisite:** Registration in the BSc ENCS Program.

B.Sc. in Environmental and Conservation Sciences Class Schedule, Winter 2021

NS 390 - cross-listed with YU FNGA 240 – Indigenous Peoples and Research (UA 45310; YU CRN 20177) Instructor: L. Charlie

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. **Prerequisite:** YukonU HIST 140 or equivalent, and registration in BSc ENCS Program.

REN R 201 – Introduction to Geomatic Techniques (cross-listed with YukonU GEOG 250) (UA 42555; YU CRN 20208) 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 20209), the mandatory lab and tutorial component of this course. Additional lab fee: \$80. Students who have previously taken YukonU'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 – Introduction to the Circumpolar World (UA 42557; YU CRN 20193) Instructor: A. Graham

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 and is offered through 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 307 - Environmental Assessment Principles and Methods (cross-listed with YU RRMT 238) (UA 90538; YU CRN 20219) Instructor: B. Milnes

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 46368; YU CRN 20192) 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).

B.Sc. in Environmental and Conservation Sciences Class Schedule, Winter 2021

REN R 366 – Restoration Ecology (UA 45282; YU CRN 20194) Instructor: J. Karst (via Zoom from Edmonton)

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. **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.

REN R 376 – Wildlife Ecology and Management (lecture cross-listed with RRMT 223) (UA 42552; YU CRN 20195) Instructors: T. Jung, L. Gray

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. **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 - Directed Study (UA 42550; YU CRN 20210)

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

REN R 401 Contemporary Issues of the Circumpolar World II (cross-listed with NOST 325) (UA 43567; YU CRN 20200) Instructor: (through University of the Arctic)

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** 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 Peoples and Cultures of the Circumpolar North II (cross-listed with NOST 329) (UA 43568; YU CRN 20203) Instructor: (through University of the Arctic)

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** 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 401B – Northern Avian Ecology (cross-listed with BIOL 225 Ornithology) (UA 45231; YU CRN 20211) 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's BIOL 225 for transfer credit to U of Alberta 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).

B.Sc. in Environmental and Conservation Sciences Class Schedule, Winter 2021

REN R 401H – Beringia: Its Pleistocene Environment and Paleoecology (cross-listed with BIOL 290) (UA 45230; YU CRN 20212) Instructor: T. Kuhn

This course presents a natural history overview of the subcontinent of Beringia—the unglaciated landmasses of eastern Siberia, Alaska and the Yukon that were connected via the Bering Land Bridge during glacial periods. We will cover a variety of topics ranging from the geologic formation of Beringia and the evolution of its flora and fauna to the history of human inhabitation. The objective of lectures will be to synthesize a variety of primary data and scientific theory so students can develop an understanding of the physical, climatological, ecological and biogeographical mechanisms shaping Beringia's landscapes and ecosystems. Students who have already completed YU's BIOL 290 for transfer credit to U of Alberta may not take REN R 401H for credit.

Prerequisite: YukonU BIOL 101, U of Alberta BIOL 108, or equivalent first-year biology course, or YukonU NOST 201, and registration in the BSc in Environmental and Conservation Sciences program.

REN R 427 - Science Policy and Canada's North (UA 98836; YU CRN 20213) Instructor: A. Ogden

The purpose of this course is to expose students to key themes in science policy in the Canadian North, and to prepare students for careers at the northern science-policy interface. Case studies from the Canadian North will be used to explore the main themes of the course. Topics will include the basic elements of the policy-making process and how science contributes to policy making; the process by which scientific knowledge is generated and the role science and technology plays in society; and the two elements of science policy: science for policy, and policy for science. This course is used as a substitution for ENCS 473 in the B.Sc. ENCS Northern Systems Major. **Prerequisite:** Registration in the BSc in Environmental and Conservation Sciences program.

REN R 465 - Northern Exposures Field School TENTATIVE (dependent on COVID restrictions) (UA 98962; YU CRN TBD) Instructors: M. Douglas, 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. 20-28, 2021, with additional reading assigned before the course start, and an assignment due afterwards. For more information, contact Gabriel Rivest: [rivest@ualberta.ca](mailto:rivist@ualberta.ca). Activities and schedule are TBD depending on COVID-related restrictions.

REN R 466 - Climate Change and the Circumpolar World (cross-listed with YU GEOG 290) (UA 42448; YU CRN 20214) 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. Students who have previously taken YU's GEOG 290 for transfer credit to U of Alberta may not take REN R 466 for credit. **Prerequisite:** Registration in the BSc ENCS Program.

REN R 491 – Land-use Planning in Canada's North, Northern Systems Major Capstone course (UA 42470; YU CRN 20215) Instructor: TBD

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.

R SOC 375 Public Participation and Conflict Resolution (UA 90476; YU CRN 20218) Instructor: C. Voss

B.Sc. in Environmental and Conservation Sciences Class Schedule, Winter 2021

The anatomy of environmental and resource management conflict is examined through a lens of critical sociological theory and deliberative democracy. Focusing on contemporary case studies of conflict in energy production, forestry, conservation and protected areas management, social practices and strategies for conflict resolution are explored. NOTE: delivery of this course will be fully asynchronous online. Material will be posted on YukonU's Moodle system. However, this does not mean that it is self-paced – students must plan to access the material regularly and meet deadlines throughout the term. **Prerequisite:** Registration in the BSc ENCS Program.

Other Courses Offered by Yukon University:

MATH 105 Introductory Statistics (YU CRN [20179](#)) Instructor: B. Gaas

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. This course (or an equivalent introductory statistics course) is the recommended prerequisite for REN R 480 Applied Statistics for Environmental Sciences, which will be offered in Fall 2021. **Prerequisite(s):** MATH 11. MATH 12 or MATH 130 strongly recommended.