RENR 250 / RRMT 239

Water Resource Management / Freshwater Ecosystems and Hydrology

In Fall 2018, RRMT 239 – Freshwater Ecosystems and Hydrology, is being offered at Yukon College concurrent with the University of Alberta's RENR 250, Water Resource Management, as part of the Northern Environmental and Conservation Sciences, B.Sc. Program. All students registered in RRMT 239 or RENR 250 must adhere to requirements outlined in this course syllabus. University of Alberta students must also be aware of, and adhere to, the University's Code of Student Behaviour, referenced in the outline. Yukon College students must be aware of, and adhere to, Yukon College's Academic Regulations, also referenced in the outline.

INSTRUCTOR: Maciej Stetkiewicz

Climate Change and Northern Hydrology Project Coordinator
Northern Climate ExChange, Yukon Research Centre

OFFICE HOURS: By appointment

OFFICE LOCATION: NR32, Yukon Research Centre

TELEPHONE/E-MAIL: (867)668-8874 / mstetkiewicz@yukoncollege.yk.ca

LAB INSTRUCTOR: Nina Vogt

Research Assistant
Nothern Climate ExChange, Yukon Research Centre

OFFICE HOURS: By appointment

OFFICE LOCATION: NR32, Yukon Research Centre

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CLASS DAYS & TIMES: Monday and Wednesday 1030am – 12:00pm

CLASS LOCATION: A2206 – Whitehorse (Ayamdigut)

LAB DAYS & TIMES: Thursday 1:00pm – 4:00pm

LAB LOCATION: A2001 – Whitehorse (Ayamdigut)

COURSE DESCRIPTION:

This is a two-component course intended to teach the student habitat assessment techniques for freshwater ecosystems; as well as basic elements of hydrology. The freshwater ecology portion of the course will emphasize the applied aspects of limnology. Laboratory sessions will focus on the collection of data relevant to the physical, chemical and biological variables that influence living organisms and their interactions within these systems. Topics covered include an overview of freshwater as environment, freshwater flora and fauna, population dynamics, community ecology, energy and chemical cycles. The hydrology portion of the course will study how water is distributed, moved and stored. Students will learn about the hydrology cycle including important components such as: precipitation, storage, sun-off, streamflow analysis, water quality and how these relate to freshwater ecology.

STUDENT LEARNING OUTCOMES AND COMPETENCIES:

Upon successful completion of this course students will be able to do the following:

- Have a clear understanding of freshwater systems as an environment
- Recognize the diversity of aquatic organisms, their respective trophic levels and interactions.
- Understand population dynamics, community ecology, energy flow and chemical cycles existing in freshwater systems.
- Have the basic skills necessary to assess freshwater habitats.
- Understand fundamental hydrologic principles including the distribution of water and the pathways and mechanisms of water movement, measurement of precipitation and water flow, the watershed as a unit for study and management, water related processes including erosion, solution, transport and deposition;
- Recognize the role of water as a shaper of landscapes and as an essential component of ecosystems.

COURSE FORMAT:

Course objectives will be attained primarily through learning activities during lectures and labs. Readings will be provided when necessary to supplement lecture and lab learning activities.

There is a mandatory lab component to this course. Many labs will be conducted outside and,

therefore; could be physically demanding and require appropriate outdoor clothing. Successful completion of the lab component is required to gain credit for this course.

COURSE PREREQUISITES AND/OR CO-REQUISITES:

Yukon College RRMT 239 students require admission to second-year of the Renewable Resources Management Program, NOST 201 AND RRMT 125.

University of Alberta RENR 250 students require registration in the B.Sc. in Northern Environmental and Conservation Sciences Program.

REQUIRED TEXTBOOKS/MATERIALS:

There is no specific textbook for this class. Assigned readings will be provided as handouts.

COURSE WEBSITE

Moodle will be used to post lecture/lab slides, assignments and relevant course/lab information. Assignments and lab reports must be submitted via Moodle. Exceptions may be made at the digression of the instructor/lab instructor; however, it is recommended to contact the instructor/lab instructor ahead of time when possible.

YUKON COLLEGE ACADEMIC STANDARDS AND REGULATIONS

Information on academic standing and student rights and responsibilities can be found in the current Academic Regulations that are posted on the Student Services/ Admissions & Registration web page.

Plagiarism

Plagiarism is a serious academic offence. Plagiarism occurs when a student submits work for credit that includes the words, ideas, or data of others, without citing the source from which the material is taken. Plagiarism can be the deliberate use of a whole piece of work, but more frequently it occurs when students fail to acknowledge and document sources from which they have taken material according to an accepted manuscript style (e.g., APA, CSE, MLA, etc.). Students may use sources which are public domain or licensed under Creative Commons; however, academic documentation standards must still be followed. Except with explicit permission of the instructor, resubmitting work which has previously received credit is also considered plagiarism. Students who plagiarize material for assignments will receive a mark of zero (F) on the assignment and may fail the course. Plagiarism may also result in dismissal from a program of study or the College.

UNIVERSITY OF ALBERTA ACADEMIC INTEGRITY AND CODE OF STUDENT BEHAVIOUR

Academic Integrity

The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at www.governance.ualberta.ca) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

Code of Student Behaviour

All students at the University of Alberta are subject to the Code of Student Behaviour, as outlined at: http://www.governance.ualberta.ca/en/CodesofConductandResidenceCommunityStandards/CodeofStudentBehaviour.aspx. Please familiarize yourself with it and ensure that you do not participate in any inappropriate behavior as defined by the Code. Key components of the code include the following statements.

30.3.2(1) No Student shall submit the words, ideas, images or data of another person as the Student's own in any academic writing, essay, thesis, project, assignment, presentation or poster in a course or program of study.

30.3.2(2) c. No Student shall represent another's substantial editorial or compositional assistance on an assignment as the Student's own work.

PROFESSIONALISM AND CLASSROOM RULES OF ENGAGEMENT

Students are expected to attend all lectures and labs, be engaged and courteous in all course activities, and to be on time for class. Please do not use cellular phones during class. Laptops are permitted for note taking and in-class work; however, please do not use laptops in class for non-class-related activities. Laptops are not permitted during the mid-term of final exam. While in computer labs, students are expected to refrain from using the computers to engage in non-class-related activities (e.g. Facebook, etc.).

COURSE REQUIREMENTS/EVALUATION:

The lecture portion of the course will be evaluated by an in-class midterm examination of no more than lhr. 20 min. duration, and a 3 hour final exam set in the examination period in December.

The major practicum assignment mark will be based on a final report and presentation of your findings.

Marks will be assigned as follows:

Mid-term exam	15%
Lab Reports	30%
Lab Exam	10%
Major Assignment	20%
Final exam	25%
Total	100%

Attendance and Participation

Attendance for the lab component of this class is mandatory. Exceptions may be made at the discretion of the lab instructor. Attendance will not be taken for the lecture component of this class; however, missing class will mean missing out on important information that will be relevant for the major assignment, midterm and final exam. It is the responsibility of the student to ensure that they are caught up on any lectures that they miss.

Assignments

Each student must individually complete the major assignment. Each student will also individually complete the lab-exams, mid-term exam and final exam. Students may work in groups for lab assignments; however, each student will be required to submit an individual lab report for each lab.

Exams

There will be a mid-term exam, lab exam and final exam. If you cannot attend one of the exams, you must make arrangements with the instructor and lab instructor ahead of time as early as possible. In special circumstances when this is not possible, the instructor and lab instructor may allow for a make-up to be written.

Due Dates and Late Assignments

Due dates for assignments will be indicated when they are assigned. Assignments handed in late will be penalized 10% per day.

Assignment of grades

The total numerical score will be converted to a grade on Yukon College's letter grading system.

ELECTRONIC DEVICES:

- Students may use any electronic devices that may assist them in their assignments; however, only approved non-programmable calculators will be permitted for examinations.

RECORDING OF LECTURES, LABS, ETC.:

Audio or video recording, digital or otherwise, of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s).

Please note that some classes may be recorded using web conferencing software, and links to recordings may be posted on the class website.

YUKON FIRST NATIONS CORE COMPETENCY

Yukon College recognizes that a greater understanding and awareness of Yukon First Nations history, culture and journey towards self-determination will help to build positive relationships among all Yukon citizens. As a result, to graduate from ANY Yukon College program, you will be required to achieve core competency in knowledge of Yukon First Nations. For details, please see www.yukoncollege.yk.ca/yfnccr.

ACADEMIC ACCOMMODATION

Reasonable accommodations are available for students requiring an academic accommodation to fully participate in this class. These accommodations are available for students with a documented disability, chronic condition or any other grounds specified in section 8.0 of the Yukon College Academic Regulations (available on the Yukon College website). It is the student's responsibility to seek these accommodations. If a student requires an academic accommodation, he/she should contact the Learning Assistance Centre (LAC): lac@yukoncollege.yk.ca.

EQUIVALENCY/TRANSFERABILITY:

RRMT 239 transfers as: University of Alberta Renewable Resources 250; Water Resource management.
For current information on course transferability see http://www.bctransferguide.ca

TENTATIVE SCHEDULE

Week of	Monday Lecture	Wednesday Lecture	Thursday Lab
Sept 3	NO CLASS – Labour day	Introductions and Course information	NO LAB
Sept 10	Intro to Hydrology and Freshwater Ecosystems; and Water parameters	Primary Production	Primary Production
Sept 17	Basic Organisms	Larger Organisms	Lab time
Sept 24	Fish, Amphibians, mammals and plants	Population Dynamics	Vegetation Classification
Oct 1	Community Structure	Guest Lecture - TBD	Lab time and review for Lab exam 1
Oct 8	NO CLASS – Thanksgiving	Community Ecology - Energy Flow	Lab exam 1
Oct 15	Energy Flow - Biophysical Ecology	Biophysical Ecology and revisiting Water Quality	Water Quality - Physical and Chemical parameters
Oct 22	Review for Mid term	Mid Term	Lab time
Oct 29	Nutrient Cycles	Hydrology as a science and Streamflow **OUTLINE DUE**	Streamflow
Nov 5	Precipitation and Evapotranspiration	Storage and Ground Water	Lab time
Nov 12	NO CLASS – Remembrance Day	Ecological Assessment	Ecological Assessment
Nov 19	Water Resource Management	Data collection and modelling	Lab time
Nov 26	**Presentations**	**Presentations**	Review
Dec 3	Review for Final	Review for Final (optional) **MAJOR ASSIGNMENT DUE**	Lab exam 2

Final Exam TBD in December