Division of Applied Science & Management
RRMT 134
3 Credit Course
Fall, 2019

COURSE OUTLINE
RRMT 134

Introduction to Salmon Hatcheries and Related Fisheries Practices

3 **CREDITS**

PREPARED BY: Darrell Otto, Instructor DATE: August 30, 2019
APPROVED BY:

APPROVED BY ACADEMIC COUNCIL:
RENEWED BY ACADEMIC COUNCIL:

Division of Applied Science & Management
RRMT 121
3 Credit Course
Fall, 2019

Introduction to Salmon Hatcheries and Related Fisheries Practices

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INSTRUCTOR: Darrell Otto
OFFICE LOCATION: A2303 **CLASSROOM:** A2803

E-MAIL: dotto@yukoncollege.yk.ca **TIME:** Mondays, 1 – 4pm (more info below)

TELEPHONE: 867.668.8868 **DATES:** Sept. 6 – Dec 6, 2019

COURSE OFFERINGS (Days and Times)

Class Meetings: Mondays 1300 – 1600h
Room: A2803
Labs: As per schedule
Field Trips: To be arranged at first lecture
Duration: September 9, 2019 to December 2, 2019

COURSE DESCRIPTION

This course is an introduction to salmon hatcheries and fisheries techniques related to hatchery operations and assessment, as well as general fish husbandry. Various hatchery techniques and issues will be explored, including water quality, fish nutrition and diseases that can occur in hatcheries. The applied aspects of the course will focus on small-scale salmon incubation practices, using local salmonid rearing facilities and other resources as models for practical application of fish hatchery techniques.

PREREQUISITES

Admission to the Renewable Resources Management Program and NOST 215

EQUIVALENCY/TRANSFERABILITY

None at this time.

LEARNING OUTCOMES

Upon successful completion of this course students will have learned:

- Basic fish biology with a focus on reproduction
- The life histories of the 5 species of Pacific salmon found on the west coast of Canada
- The history of fish hatcheries and stocking
- The roles fish hatcheries serve as a fisheries management tool
- The role fish hatcheries serve in biological research
- The role fish hatcheries serve in food fish production
- The role of biotechnology in hatcheries and stocking
- Major hatchery-related genetics issues and impacts on wild stocks
- Water quality requirements of salmon in hatcheries
- Stress and the ethics of handling live fish
- Standard procedures used for salmon broodstock collection
- Monitoring salmon eggs and maintaining a quality incubation environment
- Juvenile salmon nutrition, feed conversion, growth monitoring
- Symptoms of diseases of hatchery salmon, and their treatment
- Procedures used in the marking and releasing of juvenile salmon

DELIVERY METHODS/FORMAT

The course material will be covered through a combination of lectures, labs, field trips and practical application of skills. Class meetings will be on Monday afternoons from 1-4pm. There is no specific textbook and any readings will be assigned from supplied materials or on the internet.

COURSE REQUIREMENTS/EVALUATION

ATTENDANCE

Attendance at all activities is mandatory. Unexcused absences in excess of 10% of scheduled activities may result in withdrawal from the course at the instructor's discretion.

EVALUATION: (negotiable with majority agreement during initial class meeting)

Marks will be assigned as follows:

Unit Quizzes **15 %**

- Unit and pop quizzes delivered in class time

Lab/Field Trip Reports **25%**

- 5 lab reports

Essay or Research Report 2,500 word minimum comprehensive term paper		**20%**
Exam(s)		
• Midterm at the end of fall semester		**15%**
• Final Exam on Dec. 17, 2019		**25%**
	Total	**100**

REQUIRED TEXTBOOKS/MATERIALS

There is no formal text for the course. Readings will be provided.

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.

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.

SYLLABUS

The major course topics and scheduling are detailed below:

LECTURES AND LESSONS:

13 lectures/labs/field trips are planned over the duration of the course:

RRM 134 Lecture/Lesson Series – 2019

Date	Lecture Topic	Laboratory/Field Trip
Sept. 9	Course Introduction/Logistics Planning Fish Biology and Adaptations to the Aquatic Environment	
Sept. 16	Yukon Salmonids and the Life Cycle of Pacific Salmonids	Fish Dissection
Sept. 23	Life Histories of Yukon Chinook and Chum Salmon	
Sept. 30	The History and Roles of Fish Hatcheries Broodstock Collection and Egg Fertilization Procedures	Fry Capture and Sampling
Oct. 7		Hatchery Data Collection
Oct. 16*	Water Quality Requirements of Salmonids Incubation Site Characteristics	Water Quality Assessment
Oct. 21	Mid-term Exam Salmon Hatchery Incubation Systems	
Oct. 28		Incubation Systems
Nov. 4	Rearing of Juvenile Salmonids Impacts of Hatchery Reared Fish	
Nov. 14*	Introduction to Fish Nutrition Term Paper Due	
Nov. 18	Fish Disease in Hatcheries	
Nov. 25	Fry Tagging and Marking Transporting and Releasing of Fry	
Dec. 2	Pacific Salmon Spawner Stock Assessment	

*** Class date and time changed to compensate for a Monday holiday**