COURSE OUTLINE: NRT253 - FISH CULTURE & MGMNT

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Course Code: Title	NRT253: FISH CULTURE AND MANAGEMENT
Program Number: Name	5214: FISH/WILD CONSERVATN
Department:	NATURAL RESOURCES PRG
Academic Year:	2024-2025
Course Description:	This course concentrates on management strategies for the conservation and sustainability of Ontario`s fishery resources. Emphasis will be placed on management tools such as harvest control, habitat conservation, restoration and development as well as fish stocking. In addition, hatchery requirements and operation for the culture of cold-water fish such as trout and salmon will be featured. There will be onsite visits to area hatcheries.
Total Credits:	3
Hours/Week:	3
Total Hours:	42
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Vocational Learning Outcomes (VLO's) addressed in this course: **Please refer to program web page for a complete listing of program outcomes where applicable.**	**5214 - FISH/WILD CONSERVATN** VLO 1 Demonstrate clear, concise and industry appropriate written, spoken and visual communication skills VLO 2 Identify, discuss, organize and assess common flora and fauna species found throughout Ontario, including biological characteristics VLO 3 Demonstrate the ability to follow standardized protocols to collect field data on fish and wildlife populations in a variety of weather and site conditions. VLO 5 Start and manage their careers in the Fish and Wildlife Conservation field. VLO 6 Understand the importance of managing fish and wildlife resources in Ontario and related federal, provincial and municipal legislation. VLO 7 Recognize the contributions and applications of various science disciplines in the understanding of natural environments. VLO 11 Analyze, evaluate and apply subjective and objective safety considerations.
Essential Employability Skills (EES) addressed in this course:	EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience. EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication. EES 4 Apply a systematic approach to solve problems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others.

	EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.
Course Evaluation:	Passing Grade: 50%, D A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Other Course Evaluation & Assessment Requirements:	Academic success is directly linked to attendance. Missing more than 1/3 of the course hours in a semester shall result in an `F` grade for the course.

Course Outcomes and Learning Objectives:

Course Outcome 1	**Learning Objectives for Course Outcome 1**
1. Outline the history and importance of Canada`s / Ontario`s fisheries resource.	1.1 Discuss the state of Canada`s commercial seafishery, freshwater fishery and aquaculture production. 1.2 Summarizes the commercial fishing industry in the Great Lakes since the early 1900s. 1.3 Detail the importance of Ontario`s fisheries resource. 1.4 Discuss the economics of recreational fishing in Ontario.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Discuss the factors threatening Ontario`s fisheries resource.	2.1 List and describe the factors resulting in declining aquatic ecosystem health. 2.2 Outline issues regarding the loss of fish habitat. 2.3 Detail the history of fisheries exploitation in the Great Lakes and the resulting changes in fisheries communities. 2.4 List the various invasive species in the Great Lakes and their impact on indigenous fish stocks.
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Outline the general principles of fisheries conservation and management.	3.1 Outline and discuss the three (3) general approaches to fisheries conservation and management. 3.2 List and briefly discuss methods of fisheries habitat conservation, restoration, protection and development. 3.3 List and explain various management prescriptions to manage the sustainable harvest of a recreation fishery. 3.4 Outline the quota system for the sustainable management of a commercial fishery 3.5 Describe the various shareholders in a fisheries resource and issues with resource allocation
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Critique Ontario`s Strategic Plan for Fisheries Management.	4.1 Discuss some of the important milestones in the management of the Great Lakes including the formation of the Great Lakes Fishery Commission (GLFC), the International Joint Commission (IJC) as well as notable international symposia focusing on key environmental and conservation issues. 4.2 State the goals and strategic management actions to resolve Ontario`s important fisheries management issues (SPOF II). 4.3 Outline the highlights of Ecological Framework for Recreational Fisheries Management in Ontario (EFFM).

	4.4 Review the province`s regulatory guidelines for managing major sport fish through the use of Species Tool Kits. 4.5 Summarize federal initiatives to conserve, restore and develop fish habitat 4.6 Outline the province`s strategy to develop and implement a national invasive species response plan and an accord for the management of invasive aquatic species 4.7 Discuss an example of a local enhanced fisheries stewardship initiative (sturgeon protection plan) 4.8 Summarize the highlights of Ontario`s Great Lakes Conservation Blueprint for Aquatic Biodiversity
Course Outcome 5	**Learning Objectives for Course Outcome 5**
5. Fish Culture in Ontario.	5.1 Summarize basic concepts of aquaculture. 5.2 Describe extensive/intensive systems. 5.3 Outline hatchery operations. 5.4 Discuss guidelines for stocking fish. 5.5 Explain the role of hatcheries in the restoration of unique genetic fish stocks. 5.6 Research stocking records in Ontario`s water bodies. 5.7 Discuss ecological impacts of fish introductions. 5.8 Argue the pros and cons of fish stocking as a management tool.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Assignments	40%
Participation	20%
Tests	40%

Date: June 21, 2024

Addendum: Please refer to the course outline addendum on the Learning Management System for further information.