COURSE OUTLINE: NET320 - ECOSYSTEM STUDIES

Prepared: Natural Environment
Approved: Sherri Smith, Chair, Natural Environment, Business, Design and Culinary

Course Code: Title	NET320: ECOSYSTEM STUDIES
Program Number: Name	5221: NAT ENVIRONMENT TY
Department:	NATURAL RESOURCES PRG
Semesters/Terms:	18F
Course Description:	This project-based, experiential course will focus on the collection, analysis and management of aquatic and terrestrial data through various field surveys. The course contains a series of modules that are designed to give the student exposure to a diverse range of survey techniques related to aquatic and terrestrial ecosystems. Surveys and data collection will be associated with industry partners as well as in-house legacy projects.
Total Credits:	6
Hours/Week:	6
Total Hours:	90
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.**	**5221 - NAT ENVIRONMENT TY** VLO 1 Collect, analyze, interpret and report on data from representative biological and environmental samples. VLO 2 Utilize natural resources information technology equipment to assemble, analyze and present identified ecosystem components for purposes of conserving and managing natural resources. VLO 3 Apply the basic concepts of science to natural resource conservation and management. VLO 4 Plan, design, implement and participate in the maintenance of natural environment assessments. VLO 6 Practice principles and ethics associated with natural resource conservation and management issues. VLO 7 Ensure all work is safely completed in adherence to occupational health and safety standards. VLO 8 Contribute to the development, implementation and maintenance of environmental management systems. VLO 9 Provide ongoing support for project management. VLO 10 Communicate technical information accurately and effectively in oral, written, visual and electronic forms. VLO 11 Develop and present strategies for ongoing personal and professional development to enhance performance as an environmental technologist.
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 3 Execute mathematical operations accurately. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. 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. EES 10 Manage the use of time and other resources to complete projects. EES 11 Take responsibility for ones own actions, decisions, and consequences.
Course Evaluation:	Passing Grade: 50%, D
Course Outcomes and Learning Objectives:	

Course Outcome 1	**Learning Objectives for Course Outcome 1**
Understand the study design process and demonstrate the ability to plan a field based natural resource project relating to aquatic and/or terrestrial studies.	1.1 Define expressions such as, ecological indicator, permanent sample plot, study design, research question, etc. 1.2 Understand and describe the process of designing a field-based monitoring program 1.3 Understand the research proposal writing process: - Clearly define a hypothesis or description of a research problem - Conduct a preliminary literature search of the subject of study - Prepare an acceptable plan of action for undertaking the research, including design and methodology - Identify the study timeframe and the resources needed (i.e. budgetary requirements, equipment, staffing to undertake the study)
Course Outcome 2	**Learning Objectives for Course Outcome 2**
Understand and demonstrate proficiency with standardized industry protocols for assessing aquatic and/or terrestrial habitats.	2.1 Understand the importance of standardized resource monitoring programs in the context of ecosystem-based natural resource management 2.2 Demonstrate ability to conduct field surveys applying standardized protocols and techniques 2.3 Demonstrate the safe and effective use of field equipment 2.4 Demonstrate proper maintenance of field equipment 2.5 Incorporate standardized industry protocols into the study design
Course Outcome 3	**Learning Objectives for Course Outcome 3**
Demonstrate excellence in the collection and interpretation of field data.	3.1 Demonstrate competency and proficiency in field note taking, data collection and data management 3.2 Demonstrate competency and proficiency in basic navigation skills (e.g., compassing, pacing, chaining, navigating to and from plot locations, etc.) 3.3 Demonstrate ability to use data entry and analysis tools (Microsoft Excel, ArcCollector, ArcGIS, etc.)

	3.4 Use plot location tools (chain, compass, GPS, GIS, etc.) 3.5 Prepare neat and accurate maps showing plot locations and other relevant information.

Course Outcome 4	Learning Objectives for Course Outcome 4
Develop and hone interpersonal skills by working effectively as part of a team as well as interacting professionally with the public.	4.1 Participate in all fieldwork activities 4.2 Demonstrate leadership in aspects of field program logistics 4.3 Contribute equally to data collection, report preparation and presentations 4.4 Evaluate the contribution of other team members 4.5 Evaluate contribution of self 4.6 Interact professionally and courteously with members of the public 4.7 Conduct a study that incorporates stakeholder engagement (eg. Creel Survey)

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight	Course Outcome Assessed
Assignments and Quizzes	60%	1,2
Data Collection and Participation	40%	All

Date: June 22, 2018

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