SYLLABUS
BIOLOGY 184X – Explore NEPA
Fall, 2018

COURSE Biology 184X – Explore NEPA
Credit value: 3.0 (Combined Lecture and Laboratory and First Year Seminar)
University of Scranton General Education Natural Science (E) Elective
Prerequisites: None

LOCATION The University of Scranton and various locations throughout Northeastern PA

DAYS/TIME W 2:00 PM – 5:00 PM; and occasional Saturday events

TEXTS and other INSTRUCTIONAL MATERIALS

1. Assigned readings and journal articles
   a. *TIME Special Edition: The Science of Exercise (2017).*
   b. *Principles of Anatomy and Physiology with Wiley Plus, 15th ed. (2017).* Tortora and Derrickson, John Wiley and Sons, Inc.
   c. *Laudato Sí: On care for our common home.* Pope Francis, Encyclical letter. Libreria Editrice Vaticana, 2015.
   d. *The University of Scranton Jesuit Center Website* (http://www.scranton.edu/mission).
   e. *Lackawanna River Guide, 2nd ed. (2002).* Bernard McGurl, Lackawanna River Corridor Association.
   f. Other readings TBD
2. Instructor-provided PowerPoint presentations

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with Prof. Tara Fay; LSC 254; phone: 941-4395; tara.fay@scranton.edu

COURSE DESCRIPTION

This course will expose the student, serving as both subject and investigator, to the landscapes of Northeastern Pennsylvania, as she/he assesses physiological adaptation to exercise and learns the physiological and psychological benefits of an active, healthy lifestyle. The student also will learn how governmental and private organizations conserve and maintain land for public use, will learn the types of activities made possible through these efforts, and will participate in service work to promote stewardship of Pennsylvania's natural resources. The course also will fulfill First Year Seminar learning outcomes, as described in the syllabus.

FIRST YEAR SEMINAR STUDENT LEARNING OUTCOMES (SLO's)

The objective of the First Year Seminar is to enable students to participate in activities that ignite their creativity, curiosity, inquisitiveness, open-mindedness, and engagement in the world.

Student Learning Outcomes of the First Year Seminar. Upon completion of this First Year Seminar, the student will be able to:

1. demonstrate critical thinking skills;
2. contribute to intellectual discussions;
3. articulate components of the Ignatian identity and mission of The University of Scranton; and
4. demonstrate knowledge and competencies necessary to acclimate to the intellectual and functional life of the university.

EXPLORE NEPA STUDENT LEARNING OUTCOMES AND THEIR ASSESSMENT

Upon successful completion of the course, the student will:

1. know techniques for quantitatively recording and analyzing human physical performance (links to (E) Objectives 2 and 3 and to FYS SLO's 1 and 2);
- this will be assessed by having students collect, analyze, interpret and present physical performance data (see Physical Assessment Mechanisms* under Assignments and Course Content), and by asking questions related to this topic on the final exam;
2. understand human energy demands under various conditions and be able to identify the body systems responsible for meeting energetic demands (links to (E) Objectives 1, 2 and 4 and to FYS SLO 2);
- this will be assessed by having students organize and present a review session* on this topic, by engaging in discussions during the review, and by asking questions related to this topic on the final exam;
3. describe the synergism of nutrition and training in the enhancement or degradation of human physical performance and health (links to (E) Objectives 1, 2 and 4 and to FYS SLO 2);
- this will be assessed by having students organize and present a review session* on this topic, by engaging in discussions during the review, and by asking questions related to this topic on the final exam;
4. be able to articulate the physiological & psychological benefits of an active, healthy lifestyle (links to (E) Objectives 1, 2 and 4 and to FYS SLO 4);
- this will be assessed by evaluating student journal entries* and by asking questions related to this topic on the final exam;
5. be able to describe why and how governmental and private organizations acquire, develop and conserve lands for the betterment of the public, and how such activities are funded and promoted (links to (E) Objectives 5 and 6 and to FYS SLO's 1, 2 and 4);
- this will be assessed by evaluating student journal entries* that require them to relate what they have learned from local environmental leaders to the ideas espoused in *Laudato Sí* Chapter 4: *Integral Ecology*, by a class discussion of student journal entries, and by asking questions related to this guest lecture topic on the final exam;
6. understand how they themselves can serve to further land conservation for the good of the public and the environment (links to (E) Objectives 5 and 6 and to FYS SLO 1);
- this will be assessed by evaluating student journal entries* that require them reflect on service activities taken on by the class for the betterment of the local environment, and by asking questions related to related guest lecture topics and service experiences on the final exam;
7. articulate components of the Ignatian identity and mission of The University of Scranton (links to FYS SLO 3);
- this will be assessed by evaluating student journal entries* that require them reflect on class discussions of elements of the Jesuit Center website and relate them to other class endeavors;
8. know the breadth and locations of lands in Scranton and around the broader Northeastern Pennsylvania region that are available to the public for natural resource protection and recreational opportunities (links to (E) Objectives 5 and 6 and to FYS SLO's 3 and 4);
- this will be assessed by evaluating student success* in organizing hikes or other outdoor activities that involve Scranton students not enrolled in the class, and asking questions related to students' service experience on the final exam.

***ASSIGNMENTS (mentioned above)**

1. Physical Assessment Mechanisms: students will learn how to formulate a hypothesis, perform physical performance tests, collect physical performance data, input data into an Excel spreadsheet, run basic statistics, and formulate discussion points based on the statistical results
2. Review Session: students will be responsible for assimilate course content, present a summary of a sub-section of it during a review session, and be able to discuss their summary with tier peers
3. Journal Entries: depending on our activity, students will be given a few questions to address in their journal. For example, if we wanted students to articulate the benefits of an exercise we completed, we might ask them to comment on changes they observed while hiking such as changes in heart rate, respiratory rate, feelings of muscular exertion and muscular fatigue, and changes in affect before, during, and after the hike. If we wanted students to articulate what they learned from a guest lecture, we would ask them pointed questions about the lecture.
4. Evaluating Student Success In Organizing An Activity: we will develop a rubric for this, using this as a guide http://extranet.intechchs.org/trauntvein/files/slabprojectrubric.pdf

COURSE POLICIES

Course Enrollment cap: 12 students

The grading scale used is as follows:

A = 94 – 100	B = 84 – 86	C = 74 – 76	D = 60 – 64
A^- = 90 – 93	B^- = 80 – 83	C^- = 70 – 73	F = below 60
B^+ = 87 – 89	C^+ = 77 – 79	D^+ = 65 – 69	

Student grade will be determined from performance on tasks and deliverables described below.

Final Grade Breakdown:

Description	**Contribution to Final Letter Grade (%)**
Participation in Collection & Presentation of Human Performance Data	15
Topical Presentations in Review Sessions	15
Online Quizzes	10
Final Exam	25
Personal Journal & Blog	15
Participation and in Service Activities	15
Organization of an Activity	5

COURSE CONTENT & ACTIVITIES

Course Duration	16 weeks (University of Scranton Fall Semester)
Course Content	Lecture and Lab Activities, as well as an online learning component some weeks
Potential Outdoor Activities	Running, Hiking, Swimming, Road- and Mountain Biking, Rock Climbing, Kayaking, White Water Rafting, Service Activities
Physical Fitness Assessment Mechanisms	Pre-training and Post-training assessments: including: *Aerobic Performance Assessments*, including: Instrumented VO_2max treadmill sampling tests; Harvard Step Test; Timed 1.5 Mile Run; *Anaerobic Performance Assessment, including:* Wingate Test; *Strength assessments, including:* push-up and sit-up tests as outlined in the President's Challenge Adult Fitness Test *Other Assessments, including:* Resting HR journaling; body weight; daily log of exercise activity
Environ Content Assess. Mechs	Discussion of content in personal journal as well as questions in online quizzes and the final exam.
Locations for off-site exercise and service activities (Transportation will be provided)	TBD, to be determined by Activity Site and Outreach Steering Committee (see at end of Syllabus) Potential locations include: For Running: • Countryside Conservancy Trolley Trail, Clarks Summit • Lackawanna Heritage Valley Trail, Scranton and Lackawanna County • Susquehanna Warrior Trail, Luzerne County For Hiking: • Ricketts Glenn State Park – Falls Trail • Bear Creek Preserve • Dick and Nancy Eales Nature Preserve at Moosic Mountain • Delaware State Forest – Thunder Swamp Trail & Stairway Wild • Delaware Water Gap National Recreation Area – Mt. Tammany For Cycling: • Countryside Conservancy Trolley Trail and surrounding rural roads • Susquehanna Warrior Trail, Luzerne County • Lackawanna Heritage Valley Trail, Scranton and Lackawanna County For Kayaking & Multi-Mode Activities: • North Branch Land Trust Howland Preserve – hike/bike/kayak • Bear Creek Preserve – hike/kayak • Pecks Pond – Kayaking and Ecology • Lacawac Sanctuary and Biological Field Station – hiking/Boating • Bruce Lake /Promised Land State Park – hiking/biking/kayaking • Lackawanna State Park - hiking/kayaking/mtn biking/cycling
Potential Service Activities	Trail maintenance, 5K road race fundraiser, Plant A Tree program, with input from Activity Site and Outreach Steering Committee

TENTATIVE DATES OF ACTIVITIES

8/27-12/12	Each student is to keep a personal journal in which a daily log of exercise regimen and a 1+ paragraph reflection for each day that the class cohort meets. Regularly scheduled meeting dates also will at times incorporate exercise and/or outdoor activities. – links to FYS
8/29	Course syllabus and expectations; introductions (students discuss personal/academic interests and goals and we look at schedules to discuss time management strategies and confirm Saturday course dates) – links to FYS
9/5	"Pre" fitness testing Day 1 – VO2max or similar test (sample group), Harvard Step Test, Sit-up and Push-up challenge & collection of rest parameters (HR, BP, SO2, body weight)
9/12	"Pre" fitness testing Day 2 – Anaerobic fitness test, 1.5 mile run; Lecture on Physiological Adaptation to Exercise Training; Diffusion Experiment
9/15	*Saturday; Hike at Peck's Pond in Delaware State Forest and on-site Local Ecology (PA State Park Envir. Educators) and Land Conservation (PFWCL* members) guest lectures. Meet at UofS at 9 AM*
9/19	Principles of Exercise Training Lecture; LHVA Bike Ride #1 with Owen Worozbyt of LHVA, with trail and on-road training; Rail-Trail Development (PFWCL members)
9/26	Cardiopulmonary Physiology Lecture #1 (QCP Software; Scranton Cardiovascular Model)
9/29	*Saturday: LHVA Bike Ride #2 - meet at UofS At 9 AM; begin ride at Blakely Park (potentially make this a Wednesday ride)*
10/3	Jesuit and Catholic identity of the University of Scranton Lecture; and activity to help students identify university resources and policies necessary for the accomplishment of personal academic goals; a discussion about the Academic Code of Honesty; Hike at Dick and Nancy Eales Preserve at Moosic Mountain. – links to FYS
10/10	Hike at Bear Creek Nature Preserve
10/13	*Saturday: Service Project*
10/17	Nutrition and Metabolism Lecture - Rest and Short-term (<2hr) Exercise and Prolonged (>2hr) Exercise
10/24	Psychological and Immunological Effects of Exercise Lecture; *Cura Personalis* Discussion – links to FYS
10/27	*Saturday: Kayak trip as part of NEPA Trails Forum.*
10/31	Lackawanna State Park Hike; brief lecture with Env. Educator Angela Lambert
11/7	Developing Strategies to Process Information and Communicate Clearly and Effectively Lecture (related to upcoming writing submission and oral presentation) – links to FYS
11/10	*Saturday: Makeup Date in case of rainouts, etc.*
11/14	Faculty mentoring of students on lecture mini-reviews (written) & human performance data analysis (oral presentation)
11/21	Thanksgiving break
11/28	"Post" fitness testing – VO2max or similar test (sample group), Anaerobic fitness test, 1.5 mile run, Harvard Step Test, Sit-up and Push-up challenge and collection of resting parameters (HR, BP, SO2, body weight)
12/5	Course Lecture Wrap-up, Student Presentations of human performance data and lecture mini-reviews; group discussions of student conditioning data
12/12	Final Exam (actual day TBD)

ACTIVITY SITE AND OUTREACH STEERING COMMITTEE

The steering committee, with broad regional expertise, includes:

- Course Faculty Tara Fay and Terrence Sweeney
- *Pocono Forest and Waters Conservation Landscape (PFWCL) members
  - Christine Dettore, Tim Dugan, David Madl, Rob Neitz, and Janet Sweeney
  - see http://www.dcnr.pa.gov/Communities/ConservationLandscapes
- Pennsylvania State Park Environmental Educators
- Owen Worozbyt, Lackawanna Heritage Valley Trail Manager & Environmental Projects Manager
- Mark Murphy, Univ. of Scranton Sustainability Initiative Director