

Course Syllabus

Course Information:

Course Title: NRM 111 INTRODUCTION TO SUSTAINABILITY SCIENCE

Course Number: NRM F111

Number of Credits: 3

Prerequisites:

Students should have developed the knowledge and skills covered in the following courses prior to starting this course:

- NRM 101
- Placement in English 111.

In some cases, it may be possible for a student to acquire this knowledge and these skills through additional study during the course.

Location: Arctic Health Research Building (AHRB) 183

Meeting Days & Time: Tuesday and Thursday 9:45-11:15 am

Blackboard Web Site: <http://classes.uaf.edu/>

We will use the UAF Blackboard site for this course to send emails and post readings, assignments and other materials. Blackboard can be accessed at <http://classes.uaf.edu>. Email notification through Blackboard will not work for a non-UAF email address. If you principally use a non-UAF email service, (such as yahoo) go to your UAF account and forward your UAF email to that address. **You are responsible for all emails sent to your UAF email account.** Blackboard resources, links and support information are available at the UAF Blackboard homepage.

Instructor Information:

Instructor Name: Tsitsi McPherson, PhD

Contact Information: tmcpherson2@alaska.edu

Office Hours: Tuesday and Thursday 11:15am -12:15pm or by appointment

Course Text Book(s), Materials, and Resources:

Required Text Book(s):

Nissenbaum, Richard, A. 2019. Sustainable Solutions: Problem Solving for Future Generations, 1st edition. Oxford University Press

Paul, R. and Elder, L. 2016. The Miniature Guide to Critical Thinking. Foundation for Critical Thinking. 8th Edition, Revised and Updated. Available at www.criticalthinking.org.

Readings: You are responsible for reading all assigned readings prior to the class meeting and expected to come to class prepared to discuss them.

Recommended Text Book(s): None. Readings will be handed out in class or download information provided.

Websites and Other Class Resources:

- Other assigned readings will be made available on Blackboard

Materials or supplies required:

- A Windows-based or Mac computer.
- Microsoft Office, Adobe Reader.
- Reliable broadband to the internet with ability to stream videos.
- Brower settings: enabled (Java, JavaScript, cookies), disabled (popup blockers).
- Willingness to try new programs, methods, etc.

Course Description:

Sustaining the health, wellbeing, and productivity of the global social- ecological system requires considerations from many disciplinary and cultural perspectives. Social, economic, and ecological assessment of sustainability challenges need to be considered in an integrated way to arrive at robust solutions that avoid unanticipated consequences. Meeting these challenges often requires action plans that move from understanding theory to the implementation of new policies and facilitation of behavioral change.

This course studies dimensions of achieving sustainability. It draws on several underlying principles, including systems thinking, resilience theory, ecological economics, vulnerability analysis, and adaptive governance. Students are expected to enter the course with basic knowledge and understanding of contemporary sustainability challenges such as climate change, biodiversity loss, pollution and solid waste management, over-fishing, and ecosystem degradation. The class emphasizes principles and practices for sustainable solutions to these challenges.

Course Goals and Student Learning Outcomes:

Course Goals

- Develop an understanding of conceptual frameworks for analyzing and understanding sustainability
- Develop core skills in critical thinking, writing, listening, and oral presentation
- Develop knowledge of tools and methods for analyzing and solving real-world issues related to sustainability
- Apply these principles and methods through student led projects, focusing on sustainability problems

Learning Objectives

- Familiarity with terms and concepts used in sustainability science
- The ability to identify social, economic, and ecological aspects of sustainability
- Development of critical thinking skills

Knowledge to integrate social, economic, and ecological aspects of sustainability to create solutions for contemporary issues

Instructional Methods:

The course will use a combination of lectures, student discussions, student projects and student presentations. This class is interactive, relying on strong student contribution. The class atmosphere will be respectful and productive and one that encourages the joint class exploration of course themes. This class will work best if everyone participates.

Class Calendar:

This class schedule is subject to revision and update. Guest lectures in particular may be re-scheduled. Check Blackboard announcements for updates.

NOTE: Due date for Learning Exercises will be announced in Blackboard and in class.

Readings: You are responsible for reading all assigned readings prior to the class meeting and expected to come to class prepared to discuss them.

Week	Session	Topic	Reading Due	Assignment Due
1	Jan. 14, Tu	Review Syllabus Class Introduction In-Class Exercise: Drilling in ANWR 1002 - Part 1		
	Jan. 16, Th	In-Class Exercise: Drilling in ANWR 1002 - Part 2 Review Course Concepts	ANWR Readings Course Key Concepts - List	Understand course policies
PART I – CRITICAL THINKING, PRINCIPLES OF SUSTAINABILITY				
	Jan. 21, Tu	Humans and Sustainability/ What is Sustainability Science?	Skim Nissenbaum, Ch. 1: The problem we must solve Nissenbaum, Ch. 2: Developing sustainable	Self-Reflection #1 DUE: What are your personal goals for this class

2			solutions Clark 2007, Kates 2001, Vallance et al. 2011	
	Jan. 23, Th	Critical Thinking: What is it, how do we do it, and why is it important?	Critical Thinking: pp. 1- 24 (Bring book to class) Bring to class: Clark 2007, Kates 2001, Vallance et al. 2011 Discussion of sustainability in practice group options	Submit top 3 choices for sustainability in practice group project (see assignment sheet)
3	Jan. 28, Tu	System Dynamics	Miller & Spoolman Excerpt (pgs. 44-47) Chapin et al (eds). Principles of Ecosystem Stewardship. Pgs. 3-12) Excerpt	Learning Exercise – Paradigm Shift/ Sustainability Revolution
	Jan. 30, Th	Why civilizations collapse	J. Diamond, <i>Collapse</i> , 2007: Ch 14: Why Do Some Societies Make Disastrous Decisions?	Critical Thinking Analysis DUE for J. Diamond Ch. 14
4	Feb. 4, Tu	Sustainability Framework –	Chapin et al. 2009 Folke et al. 2010	
	Feb. 6, Th	Limits to Growth/ System Dynamics Review	Limits to Growth – Meadows 30 Yr Update	Critical Thinking Analysis DUE for Limits to Growth
PART II – SCALE AND SUSTAINABILITY				
5	Feb. 11, Tu	Levels of interaction: Governance, Environment and Sustainability	Nissenbaum, Ch. 9: Sustainability at the Most Local Level – The Individual Nissenbaum, Ch.10: Organizations, Institutions	

			and Sustainability	
	Feb. 13, Th	Economics, Environment and Sustainability: Guest Lecture Dr. Joshua Greenberg, Professor NRM	Costanza, 1997, 2014, Sommerkorn and Nilsson, 2015	
6	Feb. 18, Tu	Sustainability and Development: Guest Lecturer: TBA	Nissenbaum, Ch. 11: Sustainable Communities, Cities, and Regions Nissenbaum, Ch. 12: Sustainable Development and Global Sustainability	
6	Feb. 20, Th	Sustainability Toolbox	Concept Review	
7	Feb. 25, Tu Exam 1: Exam will be seated in the GIS lab in O'Neill			
PART III – SUSTAINABILITY IN ACTION				
7	Feb. 27, Th.	Environmental Justice	Agyeman Ch. 11 – Environmental Justice and Sustainability in Handbook of Sustainable Development.	Critical Thinking Analysis (p.11) DUE for
8	Mar. 3, Tu	Sustainability in Indigenous Rural Communities in Alaska: Guest Lecture Dr. Michael Koskey	Norton and Manson, 1996 Pearce et al, 2009	
	Mar. 5, Th	The Earth As A Resource: The Air we Breath	Nissenbaum, Ch. 3: The Air We Breathe Arnold et al. 2016	Sustainability in Practice Presentation: Air pollution
9	Mar. 10, 12	<i>SPRING BREAK</i>		
10	Mar. 17, Tu	The Earth As A Resource: Water	Nissenbaum, Ch. 4: Water	Sustainability in Practice Presentation: Water

	Mar. 19, Th	Sustainable Agriculture: The Earth As A Resource: Food and Agriculture, Guest Speaker: TBA	Nissenbaum, Ch. 5: Food and Agriculture	Sustainability in Practice
11	Mar. 24, Tu	FIELD TRIP – TBA		Self Reflection #2 DUE
	Mar. 26, Tu	Sustainability and Natural Resources	Nissenbaum, Ch.7: Forest and Mineral Resources	
12	Mar. 31, Tu	Sustainability and Natural Resources – Adaptive Management	https://www.doi.gov/sites/ doi.gov/files/migrated/ppa /upload/Chapter1.pdf	Sustainability in Practice Presentation:
	Apr. 2, Th	Energy in Alaska: Guest Lecture: TBA	Nissenbaum, Ch.6: Energy from Fossil Fuels to a Sustainable Future	
13	Apr. 7, Tu	Sustainability and Ecological Design: Guest Lecture: TBA	TBA	Field Trip 1 write- up due
	Apr. 9, Th	FIELD TRIP – TBA		Critical Thinking Essay DUE
14	Apr. 14, Tu	The Earth As A Resource: Solving out Garbage Problem	Nissenbaum, Ch. 8: Solving Our Garbage Problem	Sustainability in Practice Presentation:
	Apr. 16, Th	FIELD TRIP – TBA		
15	Apr. 21, Tu	Where do we go from here? UAF Sustainability Plan		
	Apr. 23, Th	Course wrap up and Final Exam Review		Field Trip Assignments #2 & #3 DUE Self-Reflection #3 DUE
TUESDAY				
FINAL EXAM, APRIL 28, 2020 8:00 – 10:00 AM. GIS LAB, O'NEILL				

Course Policies:

Attendance

You are expected to attend classes regularly; unexcused absences may result in a failing grade. You are responsible for coordinating absences and the possibility of arranging to make up missed work with the instructor prior to the absence.

If an unforeseen circumstance prevents you from attending class you are expected to contact the instructor via email or phone prior to the start of class.

If you are required to participate in either (a) military or (b) UAF-sponsored activities that will cause you to miss class, you must notify your instructor as soon as possible of your absence. You must notify your instructor of all scheduled UAF-required absences for the semester (e.g., travel to athletic events) during the first week of classes.

Late Assignments

No late discussion questions will be accepted once class begins. Other assignments will be deducted 20% per day for each day late; weekends will count as one day.

Missed exams

Each student will be held responsible for all regularly scheduled examinations. Excused absences for exams include cases of emergency or illness. With appropriate documentation students have the opportunity to take a makeup exam for its full value. Students without an unexcused absence may take make-up exams for a maximum value of 80%; this means we will multiply earned points by 0.8.

If the student misses an exam, they are expected to consult with the instructor within **48 hours** to determine the time and place of any makeup. If the final examination is missed, the student is expected to consult with the instructor within **24 hours** to determine the time and place of any makeup.

Classroom policy

Checking e-mails, typing papers for other classes, playing games, browsing the Internet, instant messaging, using cell phones and other activities not related to the class should be done during breaks or outside of the class time. Typing, excessive clicking and listening to music or other disruptive activities are not allowed during presentations and lectures. Students are expected to spend at least several hours/week outside of the class to complete assignments. Students must save and backup files. Do not store your projects only on the lab computers. Please save often and backup your files.

Important Dates

Check the UAF Academic Calendar for important dates related to fee payment, class registration and last day to drop courses. The calendar can be viewed online at:

http://www.uaf.edu/catalog/current/acad_calendar.html

Plagiarism/Academic Integrity

Plagiarism and cheating are serious offenses and may result in failure on exams, papers, projects, or courses. The entire purpose of this class is to acquire useful skills. To cheat is to lose the opportunity to acquire skills.

As noted in and excerpted from the UAF Code of Conduct
(<https://www.alaska.edu/bor/policy/09-02.pdf>)

- Plagiarism is intentionally or carelessly presenting the work of another as one's own. It includes submitting an assignment purporting to be the student's original work which has wholly or in part been created by another person. It also includes the presentation of the work, ideas, representations, or words of another person without customary and proper acknowledgement of sources. Students must consult with their instructors for clarification in any situation in which the need for documentation is an issue, and will have plagiarized in any situation in which their work is not properly documented
- Cheating is using or attempting to use materials, information, notes, study aids, or other assistance in any type of examination or evaluation which have not been authorized by the instructor.

Evaluation:

Assignments/Requirements

- 1) *Homework Assignments:* These will be a combination of:
 - a. Learning exercises (x4)
 - b. Critical thinking exercises (3 reading analysis & 1 essay)
 - c. Self-reflection papers (x2-graded)
 - d. Self-reflection course essay
 - e. Field trip reports (x4) ***NOTE*** We have three field trips planned for the course. **You are expected to take one field trip in addition to these two on your own time.** Options for this additional field trip will be outlined in the assignment sheet
(See assignment sheets for more information.)
- 2) *Quizzes:* There will be in-class, pop-quizzes on course material. Come to class prepared to demonstrate that you have understood previous lectures and have read and understood assigned readings.
- 3) *Student Group Presentation - Sustainability in Practice:* The goal of this assignment is to become knowledgeable about examples of sustainability in practice. Topics and groups will be selected by the instructor. Students are expected to find and research an example of sustainability in practice, give a presentation on that example, and write two one page fact sheets. Fact sheet number 1 will be focused at members of your peer and fact sheet number 2 at a general audience. (See assignment sheet.)

- 4) *In Class Review of UAF Sustainability Plan:* The goal of this assignment is to review previous measures considered by the University of Alaska Fairbanks to be more sustainable. Completed in 2015, the UAF Sustainability Plan, provided a history of sustainability at UAF, discussed areas for increased efficiency with reference to implementation, and highlighted the creation of the Office of Sustainability. In groups, students will be tasked with reviewing selected sections of the Sustainability Plan, providing updates on actions taken and highlighting areas of possible advancement.
- 5) *Attendance & Class Discussion:* You are expected to attend class and contribute thoughtfully and respectfully to in-class and small group discussions. If you cannot be in class, email or contact the instructor to let her know in advance. Students are expected to complete all of the assigned readings in advance of the class for which they are assigned and to come to every class prepared for a quiz and to discuss these readings.
- 6) *Exams:* You will have two exams. The final exam for the course will draw heavily from homework assignments, in-class exercises, and class lectures. **The final exam for this class will be from 8-10 a.m., Tuesday, April 28.** The complete final exam schedule is posted at: <https://uaf.edu/register/finals/#spring>

Grades

Your grade will be calculated as follows:

		Percentage of Final Course Grade
1)	Homework Assignments	15%
2)	Quizzes	10%
3)	Sustainability In Practice Group Presentation & Fact Sheets	20%
4)	UAF Sustainability plan reassessment Group project	5%
5)	Attendance & Class Discussion	10%
6)	Exams	40%
	Total	100%

A	100 – 90%
B	89 – 80%
C	79 – 70%
D	69 – 60%
F	Below 60%

Consult the course schedule and related updates and messages on Blackboard for due dates.

Assignments handed in after the due dates will receive reduced credit. Assignments more than 1 week late will receive a zero unless prior arrangements have been made with the instructor.

Each assignment and requirement will be evaluated on the following basis:

A: Is original, unique, ambitious and outstanding in concept, design and execution. Execution of work is considered excellent and demonstrated deep understanding and experimentation with materials and techniques. All work is finished on time and presented clearly and attractively. Technical challenges are actively tackled and overcome.

B+: Work is well executed with a high degree of competency and range of techniques. Work meaningfully fulfills the criteria of the assignment and communicates the concept. Work is well presented and on time.

B-: Work is complete but average in concept, design and technique. Work is limited by technical weakness and limited technique. Although satisfactory the work could use improvement.

C: Work is poor in design, concept and execution. Work is poorly presented or unfinished. Work is not innovative, creative or showing self-motivation. Technical skills are not mastered.

D: Work represents minimal effort, does not demonstrate understanding of material, is not well articulated or well organized.

F: The student did not hand in work. Work does not address the criteria of the assignment. Work fails to meet the minimum requirements of the professor in quality or quantity.

Grading:

The following grading scale will apply:

A - 90 to 100 (A- 90-91; A+ 99-100)

B - 80 to 89 (B- 80-81; B+ 88-89)

C - 70 to 79 (C- 70-71; C+ 78-79)

D - 60 to 69 (D- 60-61; D+ 68-69)

F - < 60

Adaptation

The instructor reserves the right to modify the course schedule based on availability of guest lecturers, student preferences for presentation topics and other related factors. **You are responsible for reading update messages on Blackboard for course schedule updates.** Final grades may also take into account notable progress demonstrated by an individual, or unforeseen and extenuating circumstances. In such cases, extra credit assignments and/or makeup work may be used at the discretion of the instructor

Support Services:

UAF Academic Support Services supports students with academic advising, tutoring and academic support, disability services, computing and IT support. Contact the Registrar's office for things like: enrollment, registration, petitions, transcripts, graduation and more.

Alternately, contact UAF Student Support Services for first-generation and those with disabilities or low income who may be eligible for additional student support.

UAF maintains an academic environment in which the freedom to teach, conduct research, learn and administer the university is protected. Students enjoy maximum benefit from this environment by accepting responsibilities commensurate with their role in the academic community. Visit Classroom Etiquette and Student Behavior Guidelines.

UAF Help Desk

Go to <http://www.alaska.edu/oit/> to see about current network outages and news.

Reach the Help Desk at:

- e-mail at helpdesk@alaska.edu
- fax: 907.450.8312
- phone: 450.8300 (in the Fairbanks area) or 1.800.478.8226 (outside of Fairbanks)

Disabilities Services:

UAF has a Disability Services office that operates in conjunction with the College of Rural Alaska's (CRA) campuses and UAF's Center for Distance Education (CDE). Disability Services, a part of UAF's Center for Health and Counseling, provides academic accommodations to enrolled students who are identified as being eligible for these services.

If you believe you are eligible, please visit <http://www.uaf.edu/chc/disability.html> on the web or contact a student affairs staff person at your nearest local campus. You can also contact Disability Services on the Fairbanks Campus at (907) 474-7043, fydso@uaf.edu.

