

College of Natural Science & Mathematics



Natural Resources and Environment

NRM 647: Sustainability in the Changing North

Syllabus: Fall, 2024

Instructor information

John Duffy

Contact:

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Office Hours: By Appointment

Class Information

CRN: 73462 F647-701

Location of class sessions: Online

Sessions: Tuesday & Thursday; 2p-330p

Credit Hours: 3.00

Feel free to call or email at your convenience. A note on emails - if you do not receive a response in 12 hours, do not hesitate to send a reminder.

Course Information

Location: Online

Meeting Time: Tuesday 2p-330pm via Zoom; Tuesdays and Thursdays. The course will use Canvas as its web-based learning management system.

Course Description

Explores the basic principles of sustainability of environmental and social systems with an emphasis on the Global North. Principles are applied across a range of scales from local communities to the globe, with examples in Alaska and the Arctic. This course considers basic principles that govern sustainability, resilience and change of linked ecological-social systems. We investigate how these concepts are related through Zoom-based and Canvas-based discussions that are both instructor and student-directed.

The readings and discussions will emphasize societal goals, tradeoffs, drivers of stability and change, thresholds, feedbacks and interactions, emergent properties, and temporal and spatial scales. Social-ecological resilience theory and vulnerability analysis are some of the general frameworks addressed. Apart from the theoretical frameworks presented and discussed, we hope to explore the opportunity for practical application of course topics and how theory structures observations and informs research and design of “ideal” solutions to real-world problems, and how those solutions face the realities of power and politics. Through all of the discussions we will also look at the way that different disciplines describe people, places, and ecosystems, and stress the common ground that integrates across disciplines.

Course Goals/Learning Objectives

- Acquire a basic understanding of complexity, systems-thinking, and social-ecological systems,
- Understand the unique characteristics of sustainability in the global North,
- Develop a conceptual framework for exploring sustainability and resilience
- Develop skills applying basic principles to the analysis of real-world issues related to resilience and sustainability
- Apply these principles through student led projects, focusing on integrating social, cultural, economic and ecological dimensions of systems.

Course Materials

The course does not have a required textbook; rather, the course will rely on readings from various digitally-based texts, journal articles, and case studies. All of the assigned readings may be found in the Files folder of Canvas as well as within each Module's folder.

Videos: Some sessions will include one or more videos for review. These videos are also posted within the Files and Module folders.

Skills Development

The following skills are important for solving sustainability problems in the world. This course aims to help you develop and hone these skills.

- Read, understand, and interpret readings from a variety of sources, including peer-reviewed literature
- Critically assess arguments related to societal actions for sustainability
- Clearly, logically, and confidently present information and ideas in oral presentation
- Write text to a variety of audiences in such a way that clearly conveys accurate information, is based on the best available science, is grammatically correct, and is interesting to read

Format and Class Preparation

The course will involve lectures, student and instructor-led discussions, practical in-class exercises, group collaborations and Jeopardy-style quizzes (informational, not used for grading); all delivered online via Zoom. The Zoom meeting will start at 130p in order to check technology and also provide an opportunity for questions. Keeping up with class readings is extremely important for a meaningful learning experience for yourself and your colleagues.

Class Policies:

Attendance

Everyone is expected to complete the session's assigned readings prior to each session, attend every session, and be prepared to discuss the materials. If you need to miss a class, please notify me in advance. More than three absences without reasonable cause will earn you an F in the course.

Inclusion

It is my intent that students from all diverse backgrounds and perspectives be well-served by this course, that everyone's learning needs be addressed both in and out of class, and that the diversity of that everyone brings to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexual orientation, disability, age, socioeconomic status, ethnicity, race, culture, perspective and other background characteristics. Your suggestions about how to improve the value of diversity in this course are appreciated and encouraged. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. I have attempted to avoid conflicts with major religious holidays. If, however, I have inadvertently scheduled an exam or major deadline that creates a conflict with your religious observances, please let me know as soon as possible so that we can make other arrangements.

Technology Requirements

UAF Help Desk

Go to <http://www.alaska.edu/oit/> to see about current network outages and technology news. For technical questions, contact the Help Desk at:

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

Learning Management System

For the full Canvas experience, use a laptop or desktop computer running macOS 10.14 or later or Windows 10 or later.

For additional assistance with Canvas, contact the IT Services Technical Support Center helpdesk@alaska.edu and <https://www.uaf.edu/nooktech/get-help/>

Computer Hardware and Operating System

Minimum System Requirements for Desktop Service

- Monitor resolution of 1024 x 768 or higher
- Internet connection - Broadband Internet connections are highly recommended and often required
- Headset with microphone - Microphone and headphones are important for web conferencing
- Windows 10 (Windows 7/8 are provisionally supported)
- macOS 10.14 or later (macOS 10.13 is provisionally supported)

Please note that Chromebooks and mobile devices are **not** compatible with all of the technology tools you may need to use in your online courses.

Recommended Software

For the best online class experience, be sure to have the following.

- Antivirus software
- Multiple Web Browsers ([Google Chrome](#) and [Mozilla Firefox](#))
- PDF Reader ([Adobe Reader](#), [Foxit Reader](#), or macOS Preview)
- [Office Applications](#) (UA provides [Google](#) and [Microsoft Office 365](#))
- Media player ([VLC Media Player](#))

Submitting Assignments

Written assignments can be submitted by email up until midnight on the day they are due. I will send a confirmation of receipt; if you do not receive that within a couple of days, please send a follow up. **Please include your last name in the document name (e.g., Memo1.Duffy). Also make sure your name is on all of your assignments.**

Use **Word** software and **1.5 spacing** for all writing assignments. Style/citations: APA 6th Ed. See: <http://owl.english.purdue.edu/owl/resource/560/01/>

Assignments/Grades/Requirements

The course will rely on a combination of lecture, discussion of assigned readings and practical exercises; therefore, online participation and collaboration is essential. **See pages 10 and 11 for class schedule, session topics, readings and assignments.**



Source: memegenerator.net

All materials for the course are posted on UAF Canvas. Each session has its own Canvas folder containing a To Do List, Assignments, Readings and exercises. Separate folders are provided for the final examination as well as the rubrics for all assignments. Weekly readings will be discussed; the discussion will typically be initiated with questions from the instructor.

Jeopardy-style quizzes The course will use a series of Jeopardy-style quizzes to assist in retention of important topics, themes and definitions discussed and presented in the class. The quizzes will be delivered to the entire class approximately every 3 weeks. These quizzes will not be graded.



Source: worldpress.com

Class contributions and participation (20 percent) The course relies upon your active participation and collaboration in discussing the various aspects of sustainability and resilience as presented in the lectures, discussions and reading assignments. Contributions and participation will be assessed through regularity of contributions and submittal of relevant, insightful questions on the assigned readings and journal articles during our Zoom meetings. **each student is to submit 1 or 2 discussion**

questions each week by Monday, 12 Midnight. *The questions should address the topics of the session beginning the following Tuesday.* Questions will be selected from the weekly submittal for discussion purposes. Please review the Discussion Rubric for an understanding of how discussions will be graded.

Short Essays (3) (30 percent) The short essay is an assignment to produce a focused piece of writing that explains, argues, or describes a particular topic related to sustainability; responses or considerations of cases studies are likely to serve as the basis of the essays. The essays should include headings in your paper, such as Introduction, Findings, Discussion, and Conclusion. This exercise is important because it provides practice in critical thinking and writing while also exploring sustainability both in theory and practice. The length of the short essay should not exceed 3 pages, utilizing 1” margins, 12pt font, and 1.5” spacing. The short essay assignments will be assigned during the semester; please see the course schedule for exact dates. **Please note:** After submittal, each short essay will be returned with feedback and an initial grade. Everyone has the option of 1) considering the feedback, revising the essay and resubmitting it for review and a final grade or 2) accepting the initial grade as final. Please review the Short Essay Rubric for an understanding of how discussions will be graded.

Journal article presentations (20 percent) Each student is to select a journal article of interest that is related to sustainability in the Global North. The article may be from any field. The student will serve as the topic expert of the article and submit both the journal article and an overview of the article to the instructor, via email (jjduffy@alaska.edu). The overview shall provide a summary, the key “take aways”, of the article and should not exceed 500 words. The instructor will post the article and summary. The journal article’s posting and the corresponding “take aways summary” should precede the scheduled discussion by 1 week so that all students may read the article and summary. All students are responsible for



Source: Springer.com reading the journal article, the corresponding summary and participating in a discussion of the article and summary via the designated Canvas Module. The purpose of the journal article presentations is to provide practice of library research techniques, critical reading skills as well as provide the opportunity for discussion. A guide for critiquing journal articles is provided in Appendix 1. Please review the Journal Article Presentation Rubric for an understanding of how discussions will be graded.

Collaborative Exam (30 percent). One examination will be assigned during the course. The collaborative exam will include one (1) case study that will be used to assess student understanding and application of sustainability concepts and techniques. A Discussion Board will be created on Canvas to allow the class to work as a team over a two-week period to discuss the questions, case studies and possible answers for the examination. Each student will submit their own set of answers to the examination which will be graded individually. The purpose of the examination is to foster experience in working as a team and assessing the understanding of

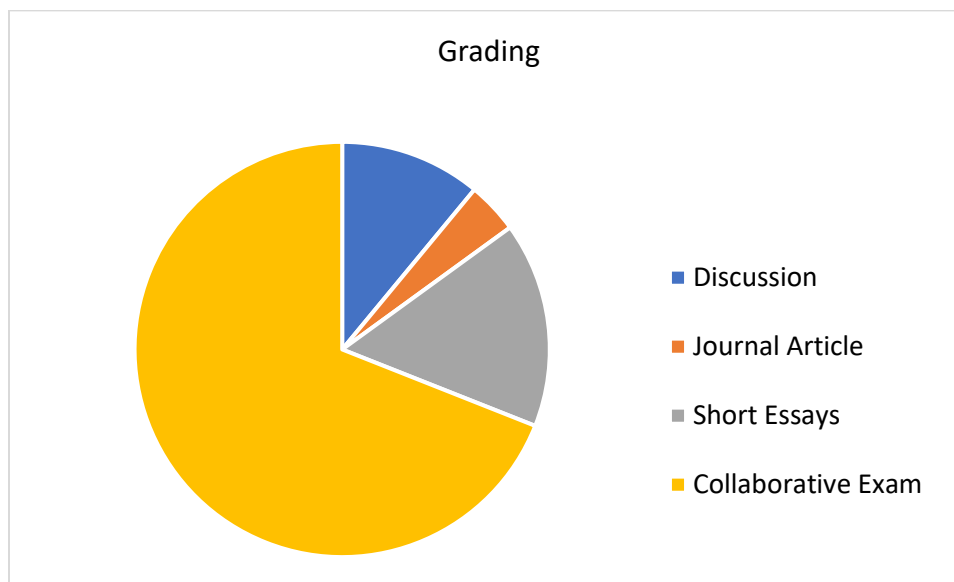


Source: uts.edu.au

course materials. Each collaborative exam represents 20% of the final grade; of the 20%, 5% is based on posted contributions via Canvas or Zoom while the remaining 15% is based on the answers provided. **Please note:** The final exam is cumulative in nature; that is, it will cover topics presented over the entire course.

Grading

Assignments handed in after the due dates are likely to receive reduced credit. The instructor reserves the right to modify the final grade in consideration of notable progress demonstrated by an individual, or unforeseen and/or extenuating circumstances. In such cases, extra credit assignments and/or makeup work may be required and used at the discretion of the instructor.



Assignment	Number of Assignments	Points per Assignment	Cumulative Points	Weights	Total Points	% of Total Grade
Discussions	11	10	110	35.8%	39.3	20.0%
Journal Article	1	36	36	109.2%	39.3	20.0%
Short Essays	3	36	108	54.6%	59.0	30.0%
Collaborative Exam	1	450	450	13.1%	59.0	30.0%
Total	16	532	704	212.7%	196.6	100.0%

The following grading scale will apply for the course:

A:- 90% to 100%: 176ts – 196pts

B : 80% to 89%: 157pts – 175pts

C : 70% to 79%: 137pts – 156pts

D : 60% to 69%: 118pts – 136pts

F : < 60%: <117pts

Ground rules

Our discussions and reading/journal topics may address controversial matters that do not have a correct or incorrect answer. There will be various opinions expressed during our discussions. It is expected that everyone will *treat each other with respect*. In addition, allowing everyone to have an opportunity to express their thoughts and opinions and finish their comments is necessary for good discussion. Also, it is important to *listen to what others are saying before formulating a response; in the Online context think and consider the others' comments before speaking, or writing your response and hitting the "Send" key*.

Use of Artificial Intelligence (AI)

All use of AI must be declared and clearly explained in all course assignments. Please note that AI does not meet the course requirements for authorship. Furthermore, AI and large logic/language model (LLM) tools may not be listed as an author on any scholarly work submitted in this course. If used as an initial writing or research tool the use of AI is allowed though it's use must be disclosed. Keep in mind that you are responsible for the accuracy, integrity and originality of your research papers and assignments including for any use of AI. In addition, any use of AI must not breach the University's plagiarism policy. All course assignments must be the your own, and not present others' ideas, data, words or other material without adequate citation and transparent referencing. A violation of this policy constitutes academic misconduct.

Expectation of Student Effort

Students should expect to spend 10-12 hours per week on this class. Students are expected to complete the weekly assignments by their due dates. If circumstances arise that cause you to need extra time on any assignment(s), e-mail your instructor for guidance.

Extensions of due dates may be granted, but your instructor expects to be informed in advance if you are not able to submit your assignment on time. (Emergency situations will be dealt with as needed.) Students are expected to maintain a working backup plan to be implemented in the event of a computer malfunction or an interruption of their normal Internet service during the course.

UNIVERSITY POLICIES

Explanation of NB/I/W grades

This course adheres to the UAF regarding the granting of NB Grades. Instructors may award a No Basis (NB) grade if there is insufficient student progress and/or attendance for evaluation to occur. No credit is given, nor is NB calculated in the GPA. This is a permanent grade and may not be used to substitute for the Incomplete. It cannot be removed by later completing outstanding work. The NB grade is for use only in situations in which the instructor has No Basis upon which to assign a grade.

Your instructor follows the University of Alaska Fairbanks Incomplete Grade Policy:

“The letter “I” (Incomplete) is a temporary grade used to indicate that the student has satisfactorily completed (C or better) the majority of work in a course but for personal reasons beyond the student’s control, such as sickness, he has not been able to complete the course during the regular semester. Negligence or indifference are not acceptable reasons for an “I” grade.”

Successful, timely completion of this course depends on committing yourself early and maintaining your effort. Failure to submit assignments in a timely manner may result in faculty-initiated Withdrawal from the course, which can result in a W on your transcript.

Adaptation

The instructor reserves the right to modify the course schedule based. **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.

Backup policy:

Students are strongly advised to save backup copies of their assignments on Google Drive or your personal computer. Do not store your projects only on the lab computers. Please save often and backup your files.

UAF Policies Disabilities Services

The University of Alaska Fairbanks is committed to providing equal access for students with disabilities. The Office of Disability Services implements the Americans with Disabilities Act (ADA) and insures that UAF students have equal access to the campus and course materials. We will work with the Office of Disabilities Services (203 WHIT, 474-5655) to provide reasonable accommodation to students with disabilities. **If you have a physical or learning disability, please advise me in writing of any special consideration necessary by the beginning of the second class.** I will do everything possible to accommodate you in accordance with the Americans with Disabilities Act. Priority seating close to the board and screen is provided for students who need to be in close proximity to the board.

If you have a learning disability that may interfere with your ability to perform the work in this course, I am happy to make any necessary accommodations. However, **it is the student’s responsibility to obtain an Accommodation Letter from the**

Disabilities Office of the Health Center (ext.6158). This letter MUST be presented to the instructor within the first two weeks of class. No accommodations will be made until this letter is given to the professor. Accommodations will NOT be made retroactively (i.e. if you have a spelling disability, you must present the letter before any points are deducted for spelling).

Student Protections And Services Statement

UAF embraces and grows a culture of respect, diversity, inclusion, and caring. Students at this university are protected against sexual harassment and discrimination (Title IX) faculty members are designated as responsible employees which means they are required to report sexual misconduct. graduate teaching assistants do not share the same reporting obligations. For more information on your rights as a student and the resources available to you to resolve problems, please go to the following site: <https://catalog.uaf.edu/academics-regulations/students-rights-responsibilities/>. Further, students are expected to adhere to the university's policies, practices, and mandates and are subject to disciplinary actions if they do not comply.

Student Services

Go to the Student Handbook (<https://www.uaf.edu/handbook/>) for things like: academic advising, tutoring, library and academic support, disability services, computing and technology, veteran and military support, academic complaint and appeals, late withdrawals, "classroom" behavior expectations and more.

UAF eLearning Student Services helps students with registration and course schedules, provides information about lessons and student records, assists with the examination process, and answers general questions. Our Academic Advisor can help students communicate with instructors, locate helpful resources, and maximize their distance learning experience. Contact the UAF eLearning Student Services staff at 907.455.2060 or toll free 1.800.277.8060 or contact staff directly – for directory listing see: <http://elearning.uaf.edu/contact>

Effective Communication

Students who have difficulties with oral presentations and/or writing are strongly encouraged to get help from:

[UAF Department of Communication's Speaking Center](#) (907.474.5470, speak@uaf.edu)

[UAF English's Department's Writing Center](#) (907.474.5314, Gruening 8th floor)

[CTC's Learning Center](#) (604 Barnette st, 907.455.2860).

Notice of nondiscrimination

UA is an AA/EO employer and educational institution and prohibits illegal discrimination against any individual: www.alaska.edu/titleIXcompliance/nondiscrimination

Academic Integrity/ Student Code of Conduct

As described by UAF, scholastic dishonesty constitutes a violation of the university rules and regulations and is punishable according to the procedures outlined by UAF. Scholastic dishonesty includes, but is not limited to, cheating on an exam, plagiarism, and collusion. Cheating includes providing answers to or taking answers from another student. Plagiarism includes use of another author's words or arguments without attribution. Collusion includes unauthorized collaboration with another person in preparing written work for fulfillment of any

course requirement. Scholastic dishonesty is punishable by **Academic Rights of Students** removal from the course and a grade of “F.” For more information go to [Student Code of Conduct](#).

An explanation of plagiarism and how to properly cite sources are available at the following two sites:

<http://library.uaf.edu/ls101-plagiarism>

<http://library.uaf.edu/ls101-citing>

Plagiarism is grounds for course failure.

The university has policies related to your rights as a student and the process for working through any disputes you may have. Those processes may be found in the section of the catalog covering Academic Rights of Students and the Academic Dispute Resolution Procedure.

Course Outline and Schedule

Each Session consists of 1 week with two class meeting times. We will meet via Zoom on Tuesday and Thursday of each week. *All weekly assignments are due by Monday, 12 midnight prior to the beginning of the new weekly session.* Please consider this course outline as being fluid so that it may be responsive to student interests and to ideas that develop during class discussions.

Course Schedule, Readings, and Assignments

Session	Dates	Topic	Readings
1	8/27 & 8/29	Introductions Introduction to course Review syllabus Complexity Theory & Wicked Problems	Syllabus Peter & Swilling, 2014 Rittel & Weber, 1973
2	9/3 & 9/5	Key Concepts; Basics of Ecology	(Akinsemolu, 2020) pp23-45
3	9/10 & 9/12	In search of definitions and meaning for sustainability	(Akinsemolu, 2020) pp229-293
4	9/17 & 9/19	Ecological Dimensions	(Akinsemolu, 2020) pp81-99; 103 Case Study 1: Shrinking Cities, Growing Cities Journal Article Presentations-2
5	9/24 & 9/26	Ecological Dimensions	(Chapin III et al., 2009) pp29-54 Journal Article Presentations-2
6	10/1 & 10/3	Sustaining Livelihoods & Well-Being	(Chapin III et al., 2009) pp55-76 Case Study 1 Due Journal Article Presentations-2

Session	Date	Topic	Readings
7	10/8 & 10/10	Sustainability in an Arctic Context	(Pongracz, Pavlov & Hannien Eds, 2020) pp3-24
8	10/15 & 10/17	Arctic Shipping & Local Community Engagement AK Local Government & Sustainability	(Pongracz, Pavlov & Hannien Eds, 2020) pp305-332
9	10/22 & 10/24	Sustainable Governance: Arctic Shipping	(Pongracz, Pavlov & Hannien Eds, 2020) pp413-442 Case Study 2: Assessing Energy Security in Nome
10	10/29 & 10/31	Tourism Development & Community Well-Being	(Pongracz, Pavlov & Hannien Eds, 2020) pp345-364
11	11/5 & 11/7	Stories of Sustainability and Change in the Arctic	(Sorly, Ghane & Kartveit Eds., 2022) pp41-56 Journal Article Presentations-2 Case Study 2 Due Case Study 3 Sustaining Sustainability in Whitehorse, Canada
12	11/12 & 11/14	Stories of Sustainability and Change in the Arctic	(Sorly, Ghane & Kartveit Eds., 2022) pp178-192 Journal Article Presentations-2
15	11/19 & 11/21	Sustainability & Economics	(Thornton, 2007) pp All (Haswell, Edenebosch, Piscicelli, & van Vuuren, 2024) pp All Journal Article Presentations-3 Case Study 3 Due Final Exam Issued
14	11/28 & 12/1	Fall Semester Break (No Classes)	
16	12/3 & 12/5	Sustainability & Education & Health	Journal Article Presentations-2
17	12/10 & 12/12	Final Exam Review 12/12	Final Exam Due 12/10

Appendix 1

Sample questions for critiquing a journal article

1. Will you remember the article a few days from now?
2. What are the main and secondary purposes of the article?
3. Are key terms defined?
4. Is a literature review reported?
5. Are the relevant ideas and theories of the field presented? Are problems or drawbacks with the ideas and theories identified?
6. Did the author distinguish between what has been accomplished in the field from what has not?
7. What method(s) is(are) used in the article's study/research? Is(are) the method(s) appropriate for the study/research?
8. What is the context of the study/research?
9. Are there any errors of fact or interpretation?
10. Have the study's procedures and methods been identified in sufficient detail for another person to duplicate the study/research?
11. Are key assumptions identified?
12. Did the author accomplish the purpose of the article?
13. Was a statistical analysis conducted? Is the analysis appropriate? Is the analysis complete and reported accurately?
14. What are the 2 or 3 main findings or conclusions of the article? Did the research support these findings?

Sources:

- Boote, David N. & Peile, Penny. (2005). Scholars before researchers: On the centrality of the dissertation literature review in research preparation. *Educational Researcher*. 34(6). ProQuest Psychology Journals
- Center for Teaching and Learning. *How to Critique a Journal Article*.
<http://www.uis.edu/ctl/writing/documents/jrnlcrtq.pdf> Accessed October 29, 2011.