CURRICULUM COMMITTEE REPORT

The Curriculum Committee met on April 2, 2024 and is recommending the following courses to the Graduate Board for approval at its April 25th meeting.

New Courses:

BIO 535 Insect Taxonomy

BIO 553 Forest Entomology

INT 504 Complex Problem-Solving for Future Leaders

INT 505 Complex Problem-Solving for Future Leaders Seminar

INT 540 Advances in Materials I

INT 541 Advances in Materials II

MEE 522 Advances in Materials I

MEE 524 Advances in Materials II

NUR 563 Evidence-Based Practice for Advanced Nursing Practice

NUR 566 Innovations in Teaching and Learning

SED 510 Teaching Early Childhood Special Education

WLE 511 Animal Demographic Estimation

Modifications:

ENG 698 Independent Study

DSE 503 Systems Foundations of Data Science and Engineering

DSE 510 Data Science and Engineering Practicum

NUR 644 Healthcare Leadership and Management

SIE 505 Formal Foundations For Information Science

SIE 516 Interactive Technologies for Solving Real-World Problems

SIE 550 Design of Information Systems

SIE 555 Spatial Database Systems

SIE 558 Real-Time Sensor Data Streams

SIE 559 Geosensor Networks

SIE 580 Ontology Engineering Theory and Practice

SWK 595 Field Practicum in Social Work

SWK 695 Advanced Field Practicum in Social Work

BIO - 535 - Insect Taxonomy

Graduate New Course Proposal Form - 2023/24 AY

General Catalog Information

Graduate New Course Proposal Form

Read before you begin

FILL IN all fields required marked with an *.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

Requested Action: ***Note*: A complete syllabus is required for all new courses.**

Please be sure that all elements required for a syllabus at the University of Maine are present. We recommend you work closely with the syllabus guidelines found at www.umaine.edu/citl.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

Please attach any required files by navigating to the right side menu and clicking "Files".

Graduate course proposals, modifications, or eliminations must be submitted to the Graduate School no later than the 3rd of each month. Please refer to the Graduate School website for the Curriculum Committee meetings schedule as well as instructions on completing this form. [https://umaine.edu/graduate/facultystaff-resources/curriculum-committee/]

Syllabus* ☑ Attached

REASON FOR NEW COURSE* There has been an increasing demand for entomology courses at UMaine, including for the graduate Entomology degree, with Insect Taxonomy being a core course required in the field. BIO 535 will fill a current gap in insect knowledge and will allow Entomology graduate students to become proficient in insect identification, as well as evolution, systematics, and taxonomy, some of the degree program objectives.

Department* School of Biology and Ecology

New Course: * ☑ New Course ☐ Experimental

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

PROPOSED CATALOG DESCRIPTION:

Course Designator* BIO

Proposed Course #* 535

Course Type: * Biological Sciences

Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max Length is 30 characters). * Insect Taxonomy

Long Course Title* Insect Taxonomy

Course Description:* This course provides students with an understanding of insect diversity and classification. Lectures will discuss systematics, nomenclature, and biology and evolutionary history of insect groups. Labs will cover the key taxonomic characteristics of northeastern insect orders and families, collection methods, and curation techniques. Outdoor labs and an insect collection will be required.

Prerequisites: Prerequisites: BIO 326 or permission of instructor

Corequisites: None

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Credit Hours: * 4

Can this course be repeated for credit? * ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.* ☐ Distance Synchronous Learning ☐ Hybrid/Blended ☐ Hyflex ☑ In-Person ☐ Online (Asynchronous)

(For information on Course Components Definitions please see: UMS Data Governance Course Components Definitions)

Course Components (type of course/used by Student Records for MaineStreet)*
☐ Applied Music ☐ Clinical ☐ Field Experience
☐ Independent Study ☑ Laboratory ☑ Lecture ☐ Recitation
☐ Research ☐ Seminar ☐ Simulation ☐ Studio ☐ Thesis
☐ Travel Course

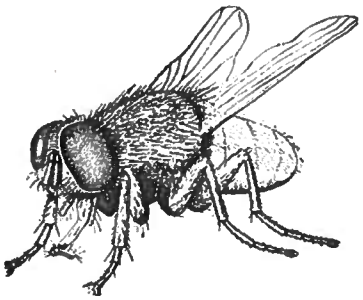
When will this course typically be offered *
☑ Fall ☐ Summer ☐ Spring ☐ Alternating ☐ Variable

Text(s) Planned for Use*
Triplehorn, C.A. and N.F. Johnson. 2005. *Borror and DeLong's Introduction to the Study of Insects*. 7th ed. Thomson Brooks/Cole, Belmont CA, 864 pp. ISBN # 0030968356

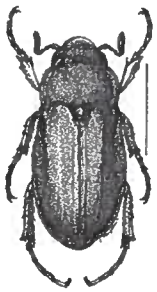
Course Instructor*
Angela Mech - Assistant Professor of Forest Entomology - 50% Teaching appointment

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*
☐ Yes
☑ No

Proposed Resources: Does the course addition or modification require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?*	☑ No. The academic unit will not request additional resources for the course ☐ Yes
Units Affected: What other academic units are affected (e.g. course overlap, prerequisites)? Have the affected units been consulted? Any concerns expressed? Please explain.*	N/A. No other programs will be affected. The prerequisite (BIO 326) is in the same department.
Course Frequency: Does the content of this course overlap significantly with other University courses? If so, list the course, explain the overlap, and justify the need for the proposed course.*	There are no courses with significant content overlap.



THE UNIVERSITY OF MAINE



Course Syllabus for BIO 535
Insect Taxonomy
Fall Semester 2024

Lecture Time:	TBD
Lab Time:	TBD
Credits:	4
Instructor:	Dr. Angela Mech
Email:	angela.mech@maine.edu
Office:	306 Deering Hall
Phone:	207-581-2984
Office Hours:	TBD or by appointment

Course materials and other pertinent information will all be made available via **Brightspace.**

Course Description

This course provides students with an understanding of insect diversity and classification. Lectures will discuss systematics, nomenclature, and biology and evolutionary history of insect orders. Labs will cover the key taxonomic characteristics of northeastern insect orders and families, collection methods, and curation techniques. Outdoor labs and an insect collection will be required.

Required Prerequisite: A General Entomology course (e.g., BIO 326) or permission of instructor

Student Learning Objectives

By the end of this course, students will be able to:

- Explain the evolution of arthropods, from basal hexapods through Hymenoptera
- Sight identify common insect families and be able key out any North American insect to the family level
- Explain the relationships of synapomorphies to the major insect radiations
- Properly collect and curate insect specimens

Required Text:

Triplehorn, C.A. and N.F. Johnson. 2005. *Borror and DeLong's Introduction to the Study of Insects*. 7th ed. Thomson Brooks/Cole, Belmont CA, 864 pp. ISBN # 0030968356

Required Supplies:

- A pair of soft entomology forceps to handle insect specimens. ~$7

Suggested Supplies:

- An aspirator for collecting small specimens. ~$15
- A pair of butterfly forceps to spread Lepidoptera wings. ~$18
- A 10x hand lens/loupe to help with identification of smaller insects outside of lab. ~$5-10

Grading

Exam 1	20%
Exam 2	30%
Lab quizzes (3)	20%
Insect collection	30%

Insect Collection

Your collections will be graded based on 3 criteria: (1) quality of mounting, labelling, preparation and organization; (2) accuracy of identifications; and (3) fulfillment of the taxonomic and technical diversity requirements.

Final grades will be awarded using the following scale:

POINTS (%)	GRADE	POINTS (%)	GRADE	POINTS (%)	GRADE
≥ 92.5	A	79.5-82.4	B-	66.5-69.4	D+
89.5-92.4	A-	75.5-79.4	C+	62.5-66.4	D
85.5-89.4	B+	72.5-75.4	C	59.5-62.4	D-
82.5-85.4	B	69.5-72.4	C-	< 59.4	F

Attendance Policy

Attendance is not specifically considered when calculating the course grade. However, the material presented in the class is derived from diverse sources. Students are *strongly* encouraged to attend each class. The treatment of various subjects in the required textbook is insufficient to substitute for one's attendance at the corresponding lectures and labs.

Make-up Policy

Students with legitimate excuses for missed exams or quizzes should contact the instructor, in advance, to discuss how it can be made-up.

Tentative Schedule

WEEK	TUESDAY	LAB (WEDNESDAY)	THURSDAY	T & J CHAPTER
1 8/29	Welcome! The science of taxonomy	Basal Insecta Equipment issued Field collecting	Origin of Arthropoda	2 & 35
2 9/5*	Intro to phylogenetics & Hexapoda	Ephemeroptera, Odonata Lep spreading, slide mounting	Basal Insecta	5-10
3 9/12	Polyneoptera 1	Plecoptera, Dermaptera, Phasmatodea, Zoraptera Field collecting	Polyneoptera 2	11-17
4 9/19	Polyneoptera 3	Orthoptera, Mantodea, Blattodea Lab work • **Lab Quiz 1**	Post-Darwinian philosophies of taxonomy	18-21
5 9/26	Paraneoptera 1	Psocoptera, Phthripaptera, Thysanoptera, Hemiptera (Preliminary collection due – 25 specimens)	Paraneoptera 2	22-25
6 10/3	Paraneoptera 3	Hemiptera 2 (Heteroptera) Field Collecting	Neuroptera	22 & 27
7 10/10	No Class (Fall Break)	Neuroptera, Coleoptera 1 Lab work	• **Exam 1**	
8 10/17	Coleoptera 1	Coleoptera 2 Lab work • **Lab Quiz 2**	Coleoptera 2	26
9 10/24	Antliophora 1	Mecoptera, Siphonaptera, Diptera Lab work	Antliophora 2	31-34
10 10/31	Antliophora 3	Lepidoptera, Trichoptera Lab work	Amphiesmenoptera 1	34 & 29-30
11 11/7	Amphiesmenoptera 2	Hymenoptera Work on collections	Hymenoptera 1	30 & 28
12 11/14	No Class (Ent Soc Mtg)	No Class (Ent Soc Mtg)	No Class (Ent Soc Mtg)	
13 11/21	Hymenoptera 2 (Insect Collection Due)	No Class (Thanksgiving Break)	No Class (Thanksgiving Break)	28
14 11/28	Hymenoptera 3	• **Lab Quiz 3** Electron Microscopy Prep	Taxonomic literature and keys	
15 12/5	Zoological Nomenclature	Electron Microscopy	TBD	
16	• **Exam 2**			

***Collecting field trip = 9/XX-9/XX**

Lab Work

The only way to learn taxonomy is to invest time at the microscope. Each week we will concentrate on the taxa of the week. In lab, you will find up to three types of specimens available:

1. Sight I.D. Taxa. You are expected to study these identified specimens carefully. Key the taxa out for yourself to confirm the determination and learn the terminology used in the key. Make notes, index cards, sketches, etc. to help you remember critical aspects of the morphology of these groups. In your lab quizzes, you will be expected to identify the taxa on your "Sight I.D." list without the aid of a textbook or name list and be able to provide basic information about their morphology and biology.
2. Mystery Taxa. These specimens will be numbered, but not identified. You are expected to take a specimen back to your microscope and key it out. It is recommended that you confirm your determination with me. The mystery taxa will not necessarily be Sight I.D. taxa. On lab quizzes, you may have mystery taxa to key down to test your familiarity with the keys and diagnostic characteristics.
3. Demos. These specimens will be set up to illustrate important characteristics or to show you a taxon that is interesting and unusual, but too uncommon for the class to use for keying. You should not touch or move the demo specimens.

Lab Access. The entomology teaching lab (Deering 301) is available to you whenever it is not in use by another class. If you want to see any specimens in the University's insect collection, you will need my permission to gain access.

Overnight collection trip

A weekend collection trip will take place Friday, September XX through Sunday, September XX. Transportation will be provided, but students will be responsible for a $28/night lodging fee. We will be travelling to the Darling Marine Center where we will set up various traps, visit variable habitats, and set up locations for night collecting. This trip will provide students with multiple opportunities to build their final collection being that there are only a limited number of labs dedicated to insect collecting during the semester. Although the trip is not required, it is *strongly* recommended as a way to reach the collection requirements; students who do not attend the trip may need to spend more time outside of class collecting specimens. More details will be provided at the start of the course.

- **(Updated 07.07.2023) Academic Honesty Statement**: Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, or generated by software or systems without the explicit approval of the instructor, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University. Please see the University of Maine System's Academic Integrity Policy listed in the Board Policy Manual as Policy 314 (*Date Issued: September 1, 2020): https://www.maine.edu/board-of-trustees/policy-manual/section-314/
- **(Updated 06.28.2023) Students Accessibility Services Statement**: If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility

Services, 121 East Annex, um.sas@maine.edu, 581.2319, as early as possible in the term. Students may begin the accommodation process by submitting an accommodation request form online and uploading documentation at https://umaine-accommodate.symplicity.com/public_accommodation/. Once students meet with SAS and eligibility has been determined, students submit an online request with SAS each semester to activate their approved accommodations. SAS creates an accessibility letter each semester which informs faculty of potential course access and approved reasonable accommodations; the letter is sent directly to the course instructor. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with Dr. Mech privately as soon as possible.

- **(Updated 08.17.2020) Course Schedule Disclaimer (Disruption Clause):** In the event of an extended disruption of normal classroom activities (due to COVID-19 or other long-term disruptions), the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.
- **(Updated 08.17.2020) Observance of Religious Holidays/Events:** The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department or University. At the discretion of the instructor, such coursework could be due before or after the examination or assignment. No adverse or prejudicial effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.
- **Sexual Discrimination Reporting:** The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination involving members of the campus, your teacher is required to report this information to Title IX Student Services or the Office of Equal Opportunity.
  - If you want to talk in confidence to someone about an experience of sexual discrimination, please contact these resources:
  - For confidential resources on campus: Counseling Center: 207-581-1392 or Cutler Health Center: at 207-581-4000.
  - For confidential resources off campus: Rape Response Services: 1-800-871-7741 or Partners for Peace: 1-800-863-9909.
  - Other resources: The resources listed below can offer support but may have to report the incident to others who can help:
  - For support services on campus: Title IX Student Services: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911. Or see the OSAVP website for a complete list of services. Also, Student Wellness Resource Center (opens in a new window).

BIO - 553 - Forest Entomology

2023/24 AY - Undergraduate/Graduate Cross Listing New Course Proposal

General Catalog Information

Undergraduate/Graduate Cross Listing New Course Proposal Form

Read before you begin

FILL IN all fields required marked with an *.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

Requested Action: ***Note*: A complete syllabus is required for all new courses, including travel-study courses offered through DLL or Summer Session. Please be sure that all elements required for a syllabus at the University of Maine are present. We recommend you work closely with the syllabus guidelines found at www.umaine.edu/citl.**

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

New Course Career Offering* ☐ Undergraduate ☑ Graduate

Please attach any required files by navigating to the right side menu and clicking "Files".

Syllabus* ☑ Attached

(*Add SL: before the title of course. Refer to documentation on the criteria for Service-Learning at: www.umaine.edu/upcc)

NEW COURSE:* ☑ New Course

Please complete the Gen Ed section located towards the bottom of this form, if applicable.

REASON FOR NEW COURSE*	There has been an increasing demand for entomology courses at UMaine. This course will fill a current gap in insect knowledge that focuses on aspects that are valuable for a variety of fields including biology, ecology, forestry, botany, and environmental science. In addition, it will count as an entomology-specific course for those with the Entomology Concentration (SBE students) or Minor (non-SBE-students).

Department*	School of Biology and Ecology

EFFECTIVE SEMESTER:

Semester*	Fall	**Year***	2024

PROPOSED CATALOG DESCRIPTION:

Course Designator*	BIO	**Proposed Course #***	553

Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript). *	Forest Entomology

Long Course Title*	Forest Entomology

Course Description:*	Insects play a key role in forest health, sustainability, and succession. This course will provide an overview of the biology, ecology, identification, and impacts of major groups of forest insects, with a focus on those associated with Northeastern trees. The general principles of entomology, tree physiology, pest management, and biological invasions will also be introduced.

Prerequisites:	**BIO 200 or PSE 100 or SFR 100, or permission of instructor**

Corequisites:	

** When determining the number of credit hours for your course please note the Definition of an Undergraduate Student Credit Hour as published in the Undergraduate Catalog:

Definition of an Undergraduate Student Credit Hour: The University of Maine and the University of Maine at Machias acknowledge and adhere to the federal definition of a credit hour with respect to courses offered face-to-face, in hybrid format, and online, as developed in 2010 and published in the *Code of Federal Regulations* (CFR), Title 34, Part 600.02:

[A] credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than:

(1) One hour of classroom or direct faculty instruction and a minimum of two hours of out of class student work each week for approximately fifteen weeks for one semester or trimester hour of credit [. . .] or the equivalent amount of work over a different amount of time; or

(2) At least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution[,] including laboratory work, internships, practica, studio work, and other academic work leading to the awarding of credit hours. Rev. September 2018

Credit Hours:*	3
Does it meet Service-Learning?:*	○ Yes ◉ No
Can this course be repeated for credit? *	○ Yes ◉ No
If YES, total number of credits allowed:	
If YES, total number of completions allowed:	
Can students enroll multiple times in term?	○ Yes ◉ No
Will this course be delivered using distance technology for over 50% of the class time?	○ Yes ◉ No

(* if you answered yes to either of these questions below, please consult with CITL as soon as possible: https://umaine.edu/citl/instructional-design-2/)

Will this course be a travel study course? (If you answered yes, please contact the Division of Lifelong Learning as soon as possible for approval: https://dll.umaine.edu)*	○ Yes ◉ No

Curriculum Changes *	(•) YES, I have submitted curriculum changes documenting how this new course will add to/change the degree requirements for any relevant majors/minors. ( ) NO, this course will not be added to any lists of requirements, and therefore I have not submitted curriculum changes for it.

If you answered yes, please attach an edited copy of the current catalog with proposed changes or memorandum with proposed changes.

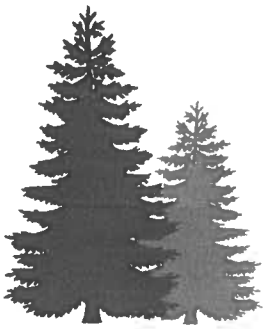
If you answered yes, please include relevant curriculum changes here along with any edits that will be necessary with the addition of this course.	See attached for the changes to the SBE Undergrad Programs.

(For information on Course Components Definitions please see: UMS Data Governance Course Components Definitions)

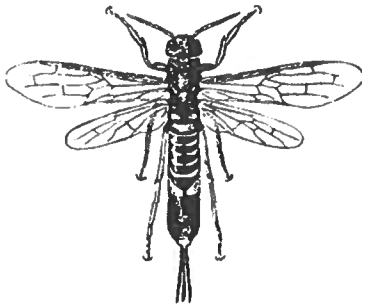
COMPONENTS (type of course/used by Student Records for MaineStreet*	[ ] Applied Music [ ] Clinical [ ] Field Experience [ ] Independent Study [ ] Laboratory [x] Lecture [ ] Recitation [ ] Research [ ] Seminar [ ] Simulation [ ] Studio [ ] Thesis [ ] Travel Course
When will this course typically be offered *	[ ] Fall [ ] Summer [x] Spring [x] Alternating [ ] Variable
TEXT(S) PLANNED FOR USE*	No text will be required for the course; all reading assignments, presentations, and discussions will be primarily based on current and historical journal articles, which will be made available.
COURSE INSTRUCTOR*	Angela Mech -- Assistant Professor of Forest Entomology. Teaching load = 50%
Are additional resources required for this course?:*	( ) YES, please list additional resources required and note how they will be funded or supported. (•) NO, the department will not request additional resources for this course, now or in the future, unless the request is accompanied by an explanation of how the increased funding or other support is to be provided.
Additional Resources Required	
For any resources needed for this course that the instructor is seeking to secure from, or access through, Fogler Library, has Fogler's Head of Collection Services affirmed their availability? *	( ) YES, Fogler has affirmed that it has the digital and/or print resources needed for this course. (•) NO, Fogler has not affirmed that it has the digital and/or print resources needed for this course (or, has confirmed that it cannot supply them).

If you answered NO above, please plan accordingly as you prepare to deliver your course.

Will offering this course result in overload salary payments (either through the college or DLL) either to the instructor of this course or to anyone else as a result of rearranging teaching assignments? If yes, please explain:*	No
Does the content of this course overlap significantly with other University courses? If so, list the course, explain the overlap, and justify the need for the proposed course.*	Content will slightly overlap with SFR 457 (Tree pests and disease). Both courses discuss insect tree pests, however, the focus of Forest Entomology will be based on the insects (their biology, ecology, identification, and impacts), rather than the focus being on the tree. In addition, SFR 457 also focuses on tree diseases, which Forest Entomology will not. Students could benefit in proficiency by taking both courses, and we would encourage students interested in the field of Forest Health to do so. Lastly, SFR 457 is primarily offered for SFR students as a requirement for their curriculum. BIO 443 would be available to a broad audience of students, allow flexibility to SFR students should the need arise, and provide an entomology-centered course for those seeking the Entomology concentration or minor.
What other department/programs are affected? Have affected departments/programs been consulted? Have any concerns been expressed? Please explain:*	None



1865 THE UNIVERSITY OF MAINE



Course Syllabus for BIO 443/553
Forest Entomology
Fall Semester 2024

Lecture Time: TBD
Instructor: Dr. Angela Mech
Email: angela.mech@maine.edu
Office: 306 Deering Hall
Phone: 207-581-2984
Office Hours: TBD or by appointment

Course Description:
Insects play a key role in forest health, sustainability, and succession. This course will provide an overview of the biology, ecology, identification, and impacts of major groups of forest insects, with a focus on those associated with Northeastern trees. The general principles of entomology, tree physiology, pest management, and biological invasions will also be introduced.

Prerequisites: BIO200 or PSE100 or SFR100 or permission of instructor

3 credits, in person; BIO 443 and BIO 553 cannot both be taken for degree credit

Course materials, class lectures, videos, homework assignments, additional readings, and other pertinent information will all be made available via **Brightspace.**

Course Goals

Insects are an integral part of all of the world's forest ecosystems – from serving beneficial roles such as pollination and decomposition, to damaging trees and competing with humans for the goods and services that forests provide. This course will go over the biological basis for recognizing, understanding, and managing insects that contribute to ecosystem processes and affect our forest resources, including their roles in natural processes such as gap formation, nutrient cycling, biodiversity, and succession. In addition, the course will review how forest insects pose socioeconomic challenges and cause severe economic losses, which need to be addressed for sustainable forestry practices. The general principles of entomology, tree physiology, pest management, biological invasions, habitat alteration, and climate change will also be introduced.

Learning Outcomes

By the end of this course, students will be able to:

- Discuss the basic general entomology and tree physiology associated with insect-tree interactions.
- Identify common forest insects, and the various signs and symptoms that signify their presence.
- Explain the biology and ecology of insects that affect woody vegetation.
- Examine and describe the short- and long-term effects of forest insects in basic ecosystem processes and biodiversity.
- Identify the importance of (silvi)cultural, physical, biological, and chemical strategies for preventing, controlling, and managing various forest pests.

Optional guides/books:

1. Forest Entomology – A global perspective. By Ciesla, W.M. 2011
2. A Field Guide to Insects, by R.E. White and D.J. Borror. Peterson Field Guide
3. A Field Guide to the Beetles of North America, R. E. White . Peterson Field Guide
4. Field Guide to Insects of North America. 2007. E.R Eaton and K. Kaufman
5. *Forest Entomology, Ecology, and Management. By Coulson, R. and Witter, J. 1984*

Undergraduate Student Grading

Quizzes and In-class Activities: Periodically, quizzes will be given at the beginning or end of a class. This will help me gauge where we are as a class and what information I may need to revisit to ensure understanding before moving on to a different topic. In addition, in-class activities may occur that will be completed before the end of the class period. Because I understand that life happens and points cannot be made up if a class is missed, the lowest scored item will be dropped.

Exams: There will be 4 exams (including the final). Questions on exams may be posed as multiple choice, matching, true or false, and/or short answer.

Primary Literature Reading Assignment and Group Discussion: Some lecture time will be designated for group discussions about reading assignments. You will be responsible for submitting a short essay homework assignment from the reading, but will work with your group to answer additional questions. Typed papers are assigned to demonstrate your understanding of information presented and read, as well as to strengthen your writing skills – no matter your future career, writing will be a fundamentally important skill. Students must write *their own unique homework.* Failure to do so will be considered a violation of the University's academic honesty guidelines.

Graduate Student Grading

Quizzes and In-class Activities: Periodically, quizzes will be given at the beginning or end of a class. This will help me gauge where we are as a class and what information I may need to revisit to ensure understanding before moving on to a different topic. In addition, in-class activities may occur that will be completed before the end of the class period. Because I understand that life happens and points cannot be made up if a class is missed, the lowest scored item will be dropped.

Exams: There will be 4 exams (including the final). Questions on exams may be posed as multiple choice, matching, true or false, and/or short answer.

Primary Literature Reading Assignment and Group Discussion: Some lecture time will be designated for group discussions about reading assignments. You will be responsible for submitting a short essay homework assignment from the reading, but will work with your group to answer additional questions. Typed papers are assigned to demonstrate your understanding of information presented and read, as well as to strengthen your writing skills – no matter your future career, writing will be a fundamentally important skill. Students must write *their own unique homework.* Failure to do so will be considered a violation of the University's academic honesty guidelines.

Forest Pest Presentation: Each graduate student will be assigned a pest species and will be responsible for teaching a ~20 minute lecture regarding their pest. Information presented will need to include information about the pest's taxonomy, identification, signs/symptoms, range distribution, host preference, economic and/or ecological damage, monitoring, and management options. Grades will be based on the information provided, quality of communication & presentation, as well as the breadth of knowledge regarding the pest. Five points of the grade will be based on how well the remainder of the class does on exam question(s) pertaining to your pest species. I will meet with students the week prior to their presentation to help develop potential questions as well as to provide any specimens or materials needed for the presentation.

Undergraduate Students	Points	% of grade
Quizzes/In-class activities	80	22%
1° Literature HW/Discussion (3 @ 30 pts each)	90	24%
Exams (4 @ 50 pts each)	200	54%
Final Percentage Grade = student points /370	370	

Graduate Students	Points	% of grade
Quizzes/In-class activities	80	18%
1° Literature HW/Discussion (3 @ 30 pts each)	90	20%
Pest Presentation (1)	75	17%
Exams (4 @ 50 pts each)	200	45%
Final Percentage Grade = student points /445	445	

Final grades will be awarded using the following scale:

POINTS (%)	GRADE	POINTS (%)	GRADE	POINTS (%)	GRADE
≥ 92.5	A	79.5-82.4	B-	66.5-69.4	D+
89.5-92.4	A-	75.5-79.4	C+	62.5-66.4	D
85.5-89.4	B+	72.5-75.4	C	59.5-62.4	D-
82.5-85.4	B	69.5-72.4	C-	< 59.4	F

Tentative Schedule

WEEK	MONDAY	WEDNESDAY	FRIDAY
1 1/17	**No Classes**	Welcome! Overview of forests	Tree types & basic physiology
2 1/24	Insect Basics	Insect classification, structure, growth, etc.	Biodiversity of insects: Major orders
3 1/31	Insect population dynamics & tree intxns	Natural enemies	Invasive species
4 2/7	**EXAM 1**	Tree decline & Forest disturbance	Root insects
5 2/17	Bark beetles	Ambrosia beetles	Pest presentations
6 2/21	**No Classes (President's Day)**	Reading #1 Group Discussions	Pest presentations
7 2/28	Wood borers	Hardwood defoliators	Pest presentations
8 3/7	Conifer defoliators	Campus survey/lab tour	**EXAM 2**
9 3/14	***Spring Break***	***Spring Break***	***Spring Break***
10 3/21	Sap feeders	Reading #2 Group Discussions	**No Class (NEFPC Conference)**
11 3/28	Bud/shoot insects	Seed & Cone insects	Pest presentations
12 4/4	Gall makers	Insects of wood products	**EXAM 3**
13 4/11	Short-term impacts of forest pests	Long-term impacts of forest pests	Pest presentations
14 4/18	Climate change & forest pests	Reading #3 Group Discussions	Pest presentations
15 4/25	Forest pests & humans	**No Classes (Maine Day)**	TBD
16	**FINAL EXAM**		

Readings

Reading #1 Papers:

a) Audley, J. P., Fettig, C. J., Steven Munson, A., Blackford, D. C., Mortenson, L. A., & Mafra-Neto, A. (2022). MCH-Based semiochemical repellents for protecting Engelmann Spruce trees from *Dendroctonus rufipennis* (Coleoptera: Curculionidae). *Journal of Economic Entomology*, 115, 187-192.

b) Gillette, N. E., Stein, J. D., Owen, D. R., Webster, J. N., Fiddler, G. O., Mori, S. R., & Wood, D. L. (2006). Verbenone-releasing flakes protect individual *Pinus contorta* trees from attack by *Dendroctonus ponderosae* and *Dendroctonus valens* (Coleoptera: Curculionidae, Scolytinae). Agricultural and Forest Entomology, 8(3), 243-251.

c) McKee, F. R., & Aukema, B. H. (2015). Influence of temperature on the reproductive success, brood development and brood fitness of the eastern larch beetle *Dendroctonus simplex* LeConte. Agricultural and Forest Entomology, 17(1), 102-112.

Reading #2 Papers:

a) Alfaro, R. I., & Shepherd, R. F. (1991). Tree-ring growth of interior Douglas-fir after one year's defoliation by Douglas-fir tussock moth. *Forest Science*, 37(3), 959-964.

b) Otvos, I. S., Cunningham, J. C., & Friskie, L. M. (1987). Aerial application of nuclear polyhedrosis virus against Douglas-fir tussock moth, *Orgyia pseudotsugata* (McDunnough)(Lepidoptera: Lymantriidae): I. Impact in the year of application. *The Canadian Entomologist*, 119(7-8), 697-706.

c) Beckwith, R. C. (1983). The effect of temperature and food deprivation on survival of first-instar Douglas-fir tussock moths (*Orgyia pseudotsugata*) (Lepidoptera: Lymantriidae). *The Canadian Entomologist*, 115(6), 663-666.

Reading #3 Paper:

a) Raffa, K. F., Powell, E. N., & Townsend, P. A. (2013). Temperature-driven range expansion of an irruptive insect heightened by weakly coevolved plant defenses. *Proceedings of the National Academy of Sciences*, 110(6), 2193-2198.

Attendance/Make-up/Late Work Policy

Although I don't take attendance, it is recommended to succeed in this course and is expected at all times. In-class assignments (quizzes or activities) cannot be made up. If students know in advance that they will miss an exam, they need to notify me as soon as possible to coordinate a make-up day. Written assignments can be turned in late, but with the consequence of 10% per day late. For example, if a 50 point paper is submitted one day late, the *maximum* points the student can receive is 45 rather than 50. If work is submitted two days late, the *maximum* points would be 40, etc.

Academic Honesty Statement: Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, or generated by software or systems without the explicit approval of the instructor, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University. Please see the University of Maine System's Academic Integrity Policy listed in the Board Policy Manual as Policy 314 (*Date Issued: September 1, 2020): https://www.maine.edu/board-of-trustees/policy-manual/section-314/

Students Accessibility Services Statement: If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, 121 East Annex, um.sas@maine.edu, 581.2319, as early as possible in the term. Students may begin the accommodation process by submitting an accommodation request form online and uploading documentation at https://umaine-accommodate.symplicity.com/public_accommodation/. Once students meet with SAS and eligibility has been determined, students submit an online request with SAS each semester to activate their approved accommodations. SAS creates an accessibility letter each semester which informs faculty of potential course access and approved reasonable accommodations; the letter is sent directly to the course instructor. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with Dr. Mech privately as soon as possible.

Course Schedule Disclaimer (Disruption Clause): In the event of an extended disruption of normal classroom activities (due to COVID-19 or other long-term disruptions), the format for this course may be modified to enable its completion within its programmed time frame. In that event, *you will be provided an addendum to the syllabus that will supersede this version.*

Observance of Religious Holidays/Events: The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department or University. At the discretion of the instructor, such coursework could be due before or after the examination or assignment. No adverse or prejudicial effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.

Sexual Discrimination Reporting: The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a faculty or staff member who is deemed a "responsible employee" about an experience of sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination involving members of the campus, they are required to report this information to Title IX Student Services or the Office of Equal Opportunity.
If you want to talk in confidence to someone about an experience of sexual discrimination, please contact these resources:

- For confidential resources on campus: Counseling Center: 207-581-1392 or Cutler Health Center: at 207-581-4000.
- For confidential resources off campus: Rape Response Services: 1-800-871-7741 or Partners for Peace: 1-800-863-9909.
- Other resources: The resources listed below can offer support but may have to report the incident to others who can help:
- For support services on campus: Title IX Student Services: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911. Or see the OSAVP website for a complete list of services. Also, Student Wellness *Resource Center (opens in a new window).*

INT - 504 - Complex Problem-Solving for Future Leaders

Graduate New Course Proposal Form - 2023/24 AY

General Catalog Information

Graduate New Course Proposal Form

Read before you begin

FILL IN all fields required marked with an *.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

Requested Action: ***Note*: A complete syllabus is required for all new courses.**

Please be sure that all elements required for a syllabus at the University of Maine are present. We recommend you work closely with the syllabus guidelines found at www.umaine.edu/citl.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

Please attach any required files by navigating to the right side menu and clicking "Files".

Graduate course proposals, modifications, or eliminations must be submitted to the Graduate School no later than the 3rd of each month. Please refer to the Graduate School website for the Curriculum Committee meetings schedule as well as instructions on completing this form. [https://umaine.edu/graduate/facultystaff-resources/curriculum-committee/]

Syllabus* ☑ Attached

REASON FOR NEW COURSE* This course, Complex Problem-Solving for Future Leaders, was offered last year as an experimental course. This year we strive to have it listed as a permanent course.

For the next generation of scientists, lawyers, policy makers, public health professionals, business executives and entrepreneurs, and for any other career path, understanding and seeking solutions to the complex problems currently faced by humanity and the ecosystem is essential. This requires, more than ever, that students be exposed to multi-method, inter-and trans-disciplinary, experiential learning. Maine and the world are experiencing multiple existential security threats (eg., climate change, health, economy, geopolitics) that are interrelated to one another. This interidsciplinary course addresses this need.

Department* Interdisciplinary Studies

New Course: * ☑ New Course ☐ Experimental (One time offering)

EFFECTIVE SEMESTER:

Semester* Fall **Year*** 2024

PROPOSED CATALOG DESCRIPTION:

Course Designator* INT **Proposed Course #*** 504

Course Type: * Interdisciplinary

Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max Length is 30 characters). *	Complex Problem-Solving
Long Course Title*	Complex Problem-Solving for Future Leaders
Course Description:*	For the next generation of lawyers, scientists, policy makers, public health professionals, engineers, business executives and entrepreneurs, and for any other career path, understanding and seeking solutions to the complex problems currently faced by humanity and the ecosystem is essential. This requires, more than ever, that students be exposed to multi-method, inter- and trans-disciplinary, experiential learning. Maine and the world are experiencing multiple existential security threats (eg., climate change, geopolitics, health, economy) that are interrelated to one another. While complex problems such as climate change are often identified within the context of a single discipline; they require solutions based on multiple disciplines that not only work together, but also beyond disciplinary boundaries. Further, complex problem-solving requires investigation at local-regional-global scales and must include perspective gained by understanding and engaging past analogs to learn from past successes, avoid repeating past mistakes, and considering new modes of cocreating solutions. The foregoing is our best option to achieve win-win pathways forward. This course will train students in the application of interdisciplinary methods for the resolution of complex problems. Instruction will be delivered by experts from multiple disciplines. Students will work in teams applying explicit methods to a broad range of critical challenges. The course is hosted by the University of Maine Portland Gateway (https://umaine.edu/portland) and is open to graduate students in any field across the University of Maine System. INT 504 and LAW 609 cannot both be taken for degree credit.
Prerequisites:	Graduate standing.
Corequisites:	Students may opt to enroll in the associated 1-credit INT 505.

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Credit Hours: * 2

Can this course be repeated for credit? * ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? * ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation. *

☑ Distance Synchronous Learning ☐ Hybrid/Blended ☐ Hyflex
☐ In-Person ☐ Online (Asynchronous)

(For information on Course Components Definitions please see: UMS Data Governance Course Components Definitions)

Course Components (type of course/used by Student Records for MaineStreet) *

☐ Applied Music ☐ Clinical ☐ Field Experience
☐ Independent Study ☐ Laboratory ☑ Lecture ☐ Recitation
☐ Research ☐ Seminar ☐ Simulation ☐ Studio ☐ Thesis
☐ Travel Course

When will this course typically be offered * ☑ Fall ☐ Summer ☐ Spring ☐ Alternating ☐ Variable

Text(s) Planned for Use* No core text book. See syllabus for a complete list of readings (articles and chapters).

Course Instructor*

Professors Paul Mayewski (UMaine), Director of the Climate Change Institute, Distinguished Professor School of Earth and Climate Sciences, Marine Sciences, Policy and International Affairs, and the Business School, and Law School

Charles Norchi (Maine Law), Benjamin Thompson Professor of Law, director of the Center for Oceans & Coastal Law, and a faculty member of the Climate Change Institute of the University of Maine.

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*

- [ ] Yes
- [x] No

Proposed Resources: Does the course addition or modification require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?*

- [x] No. The academic unit will not request additional resources for the course
- [ ] Yes

Units Affected: What other academic units are affected (e.g. course overlap, prerequisites)? Have the affected units been consulted? Any concerns expressed? Please explain.*

Graduate students in good standing across the UMS are encouraged to apply. Members of the Interdisciplinary Problem-Solving Partnership from UMaine, Maine Law and USM will co-teach this course (see syllabus for complete listing).

Course Frequency: Does the content of this course overlap significantly with other University courses? If so, list the course, explain the overlap, and justify the need for the proposed course.*	No

Complex Problem-Solving for Future Leaders

INT 504 | LAW 609

Fall 2024; Wednesdays/4:00-6:00pm, via Zoom

Instructor Information

Instructors: Professor Charles H. Norchi
Professor Paul A. Mayewski
In collaboration with the Interdisciplinary Problem-Solving Partnership (IP-SP)
Instructors responsible for each module are listed in the course schedule, below.

Email: Charles.Norchi@Maine.edu
Paul.Mayewski@Maine.edu

Host: UMaine Portland Gateway
Pips Veazey, Director
alice.veazey@maine.edu

Office Hours: By appointment

Course Information

Meeting time: Wednesdays/4:00-6:00pm, via Zoom
Location: Zoom
Credit Hours: Two

Textbook/Course Materials

All readings will be available on Brightspace

Course Management System

The course management system is Brightspace. Check regularly for updates. Please note that students are not guaranteed access to any Brightspace course page after the end of the course.

Course Goals & Learning Objectives.

GOALS	OBJECTIVES	ASSESSMENTS	INSTITUTIONAL LEARNING OUTCOMES
Upon successful completion of this course, students will know/understand:	**Upon successful completion of this course, students will be able to:**	**How the student will be assessed on these learning objectives:**	**Institutional learning outcome(s) addressed by the course objective**
Problem orientation, complexity, and the decision process	Select appropriate method(s) for application to critical challenges to solve complex problems	Individual project and presentation	Problem-Solving
Criteria for method selection in the context of a critical challenge	Use and apply ClimateReanalyzer	Weekly papers	Legal Analysis and research
Climate change & extremes	Apply policy sciences	In class exercises	Communication
Legal method	Use policy-oriented jurisprudence for complex problem-solving	Final paper	Lawyering Skills
Fundamentals of International Law	Collaboration planning for interdisciplinary research		Ethics, Diversity and Justice
Artificial Intelligence, Geospatial and remote sensing	Communicate professionally in interdisciplinary settings		
Sustainable development policy	Solve problems through interdisciplinary teamwork		

Prerequisites: No course prerequisites; must be in good graduate standing to enroll.

Assignments/Exams/Papers/Projects

Weekly reading assignments.
Short papers applying methods to problems.
Occasional in class exercises.
Group project and presentation.
Final paper.

Course Description

For the next generation of lawyers, scientists, policy makers, public health professionals, engineers, business executives and entrepreneurs, and for any other career path, understanding and seeking solutions to the complex problems currently faced by humanity and the ecosystem is essential. This requires, more than ever, that students be exposed to multi-method, inter- and trans-disciplinary, experiential learning. Maine and the world are experiencing multiple existential security threats (eg., climate change, geopolitics, health, economy) that are interrelated to one another. While complex problems such as climate change are often identified within the context of a single discipline; they require solutions based on multiple disciplines that not only work together, but also beyond disciplinary boundaries. Further, complex problem-solving requires investigation at local-regional-global scales and must include perspective gained by understanding and engaging past analogs to learn from past successes, avoid repeating past mistakes, and considering new modes of co-creating solutions. The foregoing is our best option to achieve win-win pathways forward. This course will train students in the application of interdisciplinary methods for the resolution of complex problems. Instruction will be delivered by experts from multiple disciplines. Students will work in teams applying explicit methods to a broad range of critical challenges. The course is hosted by the **University of Maine Portland Gateway (https://umaine.edu/portland)** and is open to graduate students in any field across the University of Maine System. INT 504 and LAW 609 cannot both be taken for degree credit.

Please see the following link for UMaine's required administrative policy statements - https://umaine.edu/provost/faculty-staff-resources/syllabus-guidelines-for-faculty/

COURSE POLICIES[1]

Attendance & Participation Policy

Maine Law's current attendance policy is listed in the Student Handbook, which is available on the MyLaw Portal. Please include your attendance policy for the class consistent with Maine Law School's attendance policy.

Class Recording Policy

The recording of classes is prohibited without permission. All course material will be posted through Brightspace.

If you are requesting the recording of classes pursuant to the Americans with Disabilities Act or in the case of exceptional circumstances, such as severe illness or hospitalization, you should contact the Associate Dean of Student Services.

COURSE SCHEDULE

Date	Topic	Instructor	Module Description & Assignments
Week 1: Sept 4	1. *Course Overview* 2. *Method and Problem-Orientation*	Prof. Paul Mayewski, Prof. Charles Norchi, Dr. Pips Veazey	Complex problems are often identified within the context of a single discipline, but they require solutions based on multiple disciplines that not merely work together, but critically, move beyond disciplinary boundaries. What is a problem, what is complexity, what makes problems complex, how does the prospective problem-solver select a suitable method? Students will engage these tasks throughout the course: (1) Goal clarification, (2) Trend Analysis (what happened), (3) Factor Analysis (why it happened), (4) Projection, and (5) Alternative Futures/Plausible Scenarios. ***Readings:*** Laswell, Harold D., *A Pre-View of Policy Sciences*, first three chapters Mitchell, Melanie., *Complexity: A Guided Tour,* chapter one

[1] You should refer to the Syllabus Addendum located in the Syllabus Addendum module for information on Maine Law and University of Maine System policies, including the academic integrity policy, disability accommodations, Title IX, and inclement weather.

Week 2	*Policy Sciences and World Public Order*	Prof. Charles Norchi & Prof. Amanda Lynch	In this module we will apply Policy Sciences to critical challenges confronting the public order of the world community: war, international organizations and climate extremes. ***Readings:*** IPCC 6th Assessment Report (excerpts) Visit the World Meteorological Organization website: https://public.wmo.int/en/our-mandate/what-we-do From first class, review Laswell, Harold D., *A Pre-View of Policy Sciences*, first three chapters Norchi, *Method in International Systems and Law* Brunk & Hakimi, Russia, *Ukraine and the Future of World Order* Schelling, *The Astonishing Legacy of Hiroshima* (Nobel Prize Lecture) ***Recommended:*** McDougal, Lasswell, Reisman, *The World Constitutive Process of Authoritative Decision*
Week 3	*Climate change - the Major Security Issue of the 21st Century*	Prof. Paul Mayewski	Climate change permeates every aspect of our collective (human and ecosystem) existence. Understanding the role of climate change requires a basic understanding of the controls, impacts, linear and non-linear change, and predictions for the future. We will examine several interdisciplinary problem-solving tools/methods (eg., ClimateReanalyzer, Plausible Scenario Planning, climate reanalysis vs global circulation models, EN-ROADS) that offer insights into climate change challenges. ***Readings***: *Intergovernmental Panel on Climate Change, Climate Change 2023 Synthesis Report Summary for Policymakers* 1971 chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf
Week 4	*Geospatial Technologies*	Prof. Firooza Pavri and	Geospatial technologies encompass a range of tools to map Earth's physical and social systems. These technologies are used across a wide range of disciplines and provide vital information to decision-makers. This module considers some applications of geospatial and remote sensing technologies that can be used to monitor and analyze change across different contexts. ***Readings:*** Frost, G. V. et al. (2022). *Arctic Report Card* 2022: Tundra Greenness. https://doi.org/10.25923/g8w3-6v31

			Myers-Smith, I. H., Kerby, J. T., Phoenix, G. K., Bjerke, J. W., Epstein, H. E., Assmann, J. J., John, C., Andreu-Hayles, L., Angers-Blondin, S., Beck, P. S. A., Berner, L. T., Bhatt, U. S., Bjorkman, A. D., Blok, D., Bryn, A., Christiansen, C. T., Cornelissen, J. H. C., Cunliffe, A. M., Elmendorf, S. C., … Wipf, S. (2020). Complexity revealed in the greening of the Arctic. *Nature Climate Change*, 10(2), 106–117. https://doi.org/10.1038/s41558-019-0688-1 Joksimovic, S., et al. (2023) Opportunities of artificial intelligence for supporting complex problem-solving: Findings from a scoping review.
Week 5	*Computational Modeling, Engineering, and Computer Science for Health Challenges*	Dean Giovanna Guidoboni	In this class, we delve into the paramount importance of understanding the intricacies of data in medicine. Through rigorous exploration, we uncover how decisions made by medical professionals hinge on data, often revered as infallible, yet fraught with errors stemming from machinery, operators, and patient conditions. By dissecting these complexities, we aim to mitigate negative outcomes and foster a deeper comprehension of the role of sensors and data in healthcare. ***Readings: TBD***
Week 6	*AI/Cybersecurity*	Prof. Ali Abedi and Dr. Vikas Dhiman	Current climate models either rely on physics-based modeling or previously collected data. AI and wireless sensing can be combined to create a digital twin of the climate where historical data, physics-based models, and real-time data are used to provide a clear picture of the climate and provide more accurate predictions. ***Readings:*** Naderi, S., Bundy, K., Whitney, T. et al. Sharing Wireless Spectrum in the Forest Ecosystems Using Artificial Intelligence and Machine Learning. Int J Wireless Inf Networks 29, 257–268 (2022). https://doi.org/10.1007/s10776-022-00572-9 V. Piroumian, "Making Digital Twins Work," in Computer, vol. 56, no. 1, pp. 42-51, Jan. 2023, doi: 10.1109/MC.2022.3206101.
Week 7	*Negotiation & Teamwork Methods in Applied Complex*	Dr. Allison Hodgkins and Dr. Pips	This module first explores the process of negotiation: phases, strategy, actors, common challenges, and the impact of intangible factors like culture, power, or emotions. The module will combine a conceptual overview with experiential role-playing simulation drawn from

	Problem-Solving Contexts	Veazey with Anne Heberger Marino	themes of earlier modules. Core concepts include the nature of conflict, distributive versus integrative problem-solving approaches, principles of negotiation analysis, and the role of agents. Second, research is consistently performed in large, interdisciplinary teams. Highly effective teams work to develop a shared understanding of their work and engage in explicit conversations to define a healthy team culture with supportive processes. A handful of conditions of reliability differentiate high-performing and low-performing teams. This module introduces research-informed principles and strategies to consider when forming and launching a new team and discusses group concept mapping as a mixed methods research approach. ***Readings***: Laustsen, C.E., Westergren, A., Petersson, P. et al. Conceptualizing researchers' perspectives on involving professionals in research: a group concept mapping study. Health Res Policy Sys 19, 39 (2021). https://doi.org/10.1186/s12961-021-00685-2 Lawrence-Dill CJ, Allscheid RL, Boaitey A, Bauman T, Buckler ES IV, Clarke JL, et al. (2022) Ten simple rules to ruin a collaborative environment. PLoS Comput Biol 18(4): e1009957. https://doi.org/10.1371/journal.pcbi.1009957 Hall, Kara & Vogel, Amanda & Croyle, Robert. (2019). Strategies for Team Science Success Handbook of Evidence-Based Principles for Cross-Disciplinary Science and Practical Lessons Learned from Health Researchers: Handbook of Evidence-Based Principles for Cross-Disciplinary Science and Practical Lessons Learned from Health Researchers. 10.1007/978-3-030-20992-6. Chapter 45 Castañeda, Pablo MD. (2022) The Art of Negotiation: Avoiding Positional Bargaining and Getting to Yes. Journal of Pediatric Orthopaedics 42():p S47-S49 | DOI: 10.1097/BPO.0000000000002059 (two pages) Fisher, R., Ury, W. L., & Patton, B. (2011). Getting to yes: Negotiating agreement without giving in. Penguin. Chapters I.II.III (147 pages) ***Optional readings***: (please read introduction and conclusion, skim rest):

			Faten Ghosn, (2010) Getting to the Table and Getting to Yes: An Analysis of International Negotiations, International Studies Quarterly, Volume 54, Issue 4, Pages 1055–1072, https://doi.org/10.1111/j.1468-2478.2010.00626.x Funken, Katja, (2001) The Pros and Cons of Getting to Yes - Shortcomings and Limitations of Principled Bargaining in Negotiation and Mediation. Available at SSRN: https://ssrn.com/abstract=293381 or http://dx.doi.org/10.2139/ssrn.293381
Week 8	NGO Perspectives on Complex-Problem Solving	Dr. Ray Salvatore Jennings & Dr. Adrian Cerezo	1. The goal of this module is to consider multiple human development dimensions (including social ecology, anthropology, child development, human dimensions of sustainable development, humanitarian emergencies, equity, and justice) and how they intersect with complex global challenges such as climate change and the sustainable development policy agenda. 2. This module will also examine the manner in which **climate change** interacts with, and in many cases amplifies the impacts of multiple drivers of instability and fragility in nation-states. These adjacent factors include conflict and violence, poor governance, gender inequality, increasing levels of debt, livelihood deficits, displacement, food insecurity, poor social cohesion, high levels of mis/dis/malinformation and an erosion of basic service provision. Together, factors like these create a "polycrisis" that requires systems thinking, deep contextual understanding, and coordinated effort by assistance providers addressing these complex emergencies. ***Readings:*** "A polycrisis of climate change, food insecurity, socio-economic inequality, and conflict intensity?" Alva Linner (Spring) at https://lup.lub.lu.se/luur/download?func=downloadFile&recordOId=9123453&fileOId=9123455. (pp 1-24, and 68-73). "Equitable Resource Governance Helps Build Peace" (Boudreaux and Abrahams) at https://www.land-links.org/2023/05/equitable-resource-governance-helps-build-peace/ (blog pp. 1-2) "Turning Warter Crises into Opportunities for Peacebuilding" at https://waterpeacesecurity.org/ (overview on home page)

			"Breaking Silos: Climate Change, Security, and Humanitarian Action" at https://councilonstrategicrisks.org/wp-content/uploads/2023/01/41-BreakingSilos.pdf (pp.1-10) https://www.capita.org/framing-paper-protecting-our-future-now chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://arnec.net/sites/default/files/2022-12/ARNEC-scoping%20study-web%202022-12-29.pdf Ponguta, L. A., Aragón, C. A., Varela, L. R., Moore, K., Hein, S., & Cerezo, A. (2020). Sector-wide analysis of early childhood development and education in emergencies in Colombia and considerations to strengthen systems globally. *New Directions for Child and Adolescent Development*, 2020, 103– 123. https://doi.org/10.1002/cad.20367
Week 9	*Presentations*	*Lightning Rounds and Critique*	Preliminary short student presentations
Week 10	Government & Military Perspectives	Prof. James Kraska	The military has long standing experience in applying well-honed methods to complex problems in challenging operational environments. Professor James Kraska will explain and lead the class in an application of a methodology employed by the United States Navy to a concrete and complex set of problems. ***Reading:*** The Commander's Handbook on the Law of Naval Operations
Week 11	*Business & Entrepreneurship Perspectives*	Dean Norm O'Reilly with Patrick Arnold	The decision is a core element of any problem-solving effort. This class provides a framework and background for effectively making decisions. It considers both the psychology of the business decision and the role of stakeholders and external entities in those decisions. ***Reading:*** George Foster & Norm O'Reilly (2020): Sporting Club Stakeholder Alignment: Key Stakeholder Relationships and their Association with On-The-Field and Off-The-Field Performance, Journal of Global Sport Management, DOI: 10.1080/24704067.2020.1805213

			Abeza, G., Boesen, M. Q., O'Reilly, N., & Braunstein-Minkove, J. R. (2020). Qatar 2022 World Cup: Designing a Context-Based Decision-Making Approach. *Case Studies in Sport Management*, *9*(1), 7-11. Retrieved Jul 28, 2023, from https://doi.org/10.1123/cssm.2018-0025 One additional reading TBD
Week 12	*Presentations*	Deep Dives: Round 1	Final student presentations
Week 13	*Presentations*	Deep Dives: Round 2	Final student presentations
Dec. 4	*Course Conclusion: Methods and Complexity in Problem-Solving*		

Grading for INT 504:
Short papers 50%
Project and presentation 50%

A+ (97–100), A (93–96), A- (90–92), B+ (87–89), B (83–86), B- (80–82)

INT - 505 - Complex Problem-Solving for Future Leaders Seminar

Graduate New Course Proposal Form - 2023/24 AY

General Catalog Information

Graduate New Course Proposal Form

Read before you begin

FILL IN all fields required marked with an *.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

Requested Action: ***Note*: A complete syllabus is required for all new courses.**

Please be sure that all elements required for a syllabus at the University of Maine are present. We recommend you work closely with the syllabus guidelines found at www.umaine.edu/citl.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

Please attach any required files by navigating to the right side menu and clicking "Files".

Graduate course proposals, modifications, or eliminations must be submitted to the Graduate School no later than the 3rd of each month. Please refer to the Graduate School website for the Curriculum Committee meetings schedule as well as instructions on completing this form. [https://umaine.edu/graduate/facultystaff-resources/curriculum-committee/]

Syllabus* ☑ Attached

REASON FOR NEW COURSE* For the next generation of scientists, lawyers, policy makers, public health professionals, business executives and entrepreneurs, and for any other career path, understanding and seeking solutions to the complex problems currently faced by humanity and the ecosystem is essential. This requires, more than ever, that students be exposed to multi-method, inter-and trans-disciplinary, experiential learning. Maine and the world are experiencing multiple existential security threats (eg., climate change, health, economy, geopolitics) that are interrelated to one another. This interidsciplinary course addresses this need.

Department* Interdisciplinary Studies

New Course: * ☑ New Course ☐ Experimental (One time offering)

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

PROPOSED CATALOG DESCRIPTION:

Course Designator* INT

Proposed Course #* 505

Course Type: * Interdisciplinary

Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max Length is 30 characters). * Complex Problem-Solving

Long Course Title* Complex Problem-Solving for Future Leaders Seminar

Course Description: * For the next generation of lawyers, scientists, policy makers, public health professionals, engineers, business executives and entrepreneurs - --and for any other career path---understanding and seeking solutions to the complex problems currently faced by humanity and the ecosystem is essential. This requires, more than ever, that students be exposed to multi-method, inter- and trans-disciplinary, experiential learning. Maine and the world are experiencing multiple existential security threats (eg., climate change, geopolitics, health, economy) that are interrelated to one another. While complex problems such as climate change are often identified within the context of a single discipline; they require solutions based on multiple disciplines that not only work together, but also beyond disciplinary boundaries. Further, complex problem-solving requires investigation at local-regional-global scales and must include perspective gained by understanding and engaging past analogs to learn from past successes, avoid repeating past mistakes, and considering new modes of cocreating solutions. The foregoing is our best option to achieve win-win pathways forward. This course will train students in the application of interdisciplinary methods for the resolution of complex problems. Instruction will be delivered by experts from multiple disciplines. Students will work in teams applying explicit methods to a broad range of critical challenges. The course is hosted by the University of Maine Portland Gateway (https://umaine.edu/portland) and is open to graduate students in any field across the University of Maine System.

Prerequisites: Graduate standing.

Corequisites: INT 504

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Credit Hours: * 1

Can this course be repeated for credit? * ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions

allowed:

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.* ☐ Distance Synchronous Learning ☐ Hybrid/Blended ☐ Hyflex ☐ In-Person ☑ Online (Asynchronous)

(For information on Course Components Definitions please see: UMS Data Governance Course Components Definitions)

Course Components (type of course/used by Student Records for MaineStreet)* ☐ Applied Music ☐ Clinical ☐ Field Experience ☐ Independent Study ☐ Laboratory ☐ Lecture ☐ Recitation ☐ Research ☑ Seminar ☐ Simulation ☐ Studio ☐ Thesis ☐ Travel Course

When will this course typically be offered * ☑ Fall ☐ Summer ☐ Spring ☐ Alternating ☐ Variable

Text(s) Planned for Use* No core text book.

Course Instructor* Professor Norm O'Reilly (UMaine), Dean of the Graduate School of Business

Professor Firooza Pavri (USM), Director of the Muskie School of Public Service and is Professor of Geography at the University of Southern Maine

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?* ☐ Yes ☑ No

Proposed Resources: Does the course addition or modification require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?*	☑ No. The academic unit will not request additional resources for the course ☐ Yes
Units Affected: What other academic units are affected (e.g. course overlap, prerequisites)? Have the affected units been consulted? Any concerns expressed? Please explain.*	N/A
Course Frequency: Does the content of this course overlap significantly with other University courses? If so, list the course, explain the overlap, and justify the need for the proposed course.*	N/A

Complex Problem-Solving for Future Leaders

INT 504 | LAW 609 (**2 credits**) Fall 2024; Wednesdays/4:00-6:00pm, via Zoom (online synchronous)

INT 505 (**1 credit**); online asynchronous

INT 504 Instructor Information

Instructors: Professor Charles H. Norchi Charles.Norchi@Maine.edu
Professor Paul A. Mayewski Paul.Mayewski@Maine.edu
In collaboration with the Interdisciplinary Problem-Solving Partnership (IP-SP)
Instructors responsible for each module are listed in the course schedule, below.

INT 505 Instructor Information

Instructors: Professor Firooza - Firooza.Pavri@Maine.edu
Professor Norm O'Reilly – Norman.OReilly@Maine.edu

Host: UMaine Portland Gateway
Pips Veazey, Director
alice.veazey@maine.edu

Office Hours: By appointment

INT 504 and 505 Course Information

Meeting time: **INT 504 - Wednesday 4:00-6:00 / INT 505 - Asynchronous**
Location: **Zoom**
Credit Hours: **2+1**

INT 505 Textbook/Course Materials

This course will build on the readings for INT 504 using library resources and professor-shared readings.

All readings will be available on Brightspace.

Course Management System

The course management system is Brightspace. Check regularly for updates. Please note that students are not guaranteed access to any Brightspace course page after the end of the course.

Course Goals & Learning Objectives.

GOALS	OBJECTIVES	ASSESSMENTS	INSTITUTIONAL LEARNING OUTCOMES
Upon successful completion of this course, students will know/understand:	**Upon successful completion of this course, students will be able to:**	**How the student will be assessed on these learning objectives:**	**Institutional learning outcome(s) addressed by the course objective**
Problem orientation, complexity, and the decision process	Select appropriate method(s) for application to critical challenges to solve complex problems	Individual project and presentation	Problem-Solving
Criteria for method selection in the context of a critical challenge	Use and apply ClimateReanalyzer	Weekly papers	Legal Analysis and research
Climate change & extremes	Apply policy sciences	In class exercises	Communication
Legal method	Use policy-oriented jurisprudence for complex problem-solving	Final paper	Lawyering Skills
Fundamentals of International Law	Collaboration planning for interdisciplinary research		Ethics, Diversity and Justice
Artificial Intelligence, Geospatial and remote sensing	Communicate professionally in interdisciplinary settings		
Sustainable development policy	Solve problems through interdisciplinary teamwork		

Prerequisites: No course prerequisites; must be in good graduate standing to enroll.

Assignments/Exams/Papers/Projects

Weekly reading assignments.
Short papers applying methods to problems.
Occasional in class exercises.
Group project and presentation.
Final paper

Course Description

For the next generation of lawyers, scientists, policy makers, public health professionals, engineers, business executives and entrepreneurs ---and for any other career path---understanding and seeking solutions to the complex problems currently faced by humanity and the ecosystem is essential. This requires, more than ever, that students be exposed to multi-method, inter- and trans-disciplinary, experiential learning. Maine and the world are experiencing multiple existential security threats (eg., climate change, geopolitics, health, economy) that are interrelated to one another. While complex problems such as climate change are often identified within the context of a single discipline; they require solutions based on multiple disciplines that not only work together, but also beyond disciplinary boundaries. Further, complex problem-solving requires investigation at local-regional-global scales and must include perspective gained by understanding and engaging past analogs to learn from past successes, avoid repeating past mistakes, and considering new modes of co-creating solutions. The foregoing is our best option to achieve win-win pathways forward. This course will train students in the application of interdisciplinary methods for the resolution of complex problems. Instruction will be delivered by experts from multiple disciplines. Students will work in teams applying explicit methods to a broad range of critical challenges. The course is hosted by the **University of Maine Portland Gateway (https://umaine.edu/portland)** and is open to graduate students in any field across the University of Maine System. INT 504 and LAW 609 cannot both be taken for degree credit.

Please see the following link for UMaine's required administrative policy statements - https://umaine.edu/provost/faculty-staff-resources/syllabus-guidelines-for-faculty/

Final Research Paper (INT 505)

The INT 505 portion of the course requires students to work with at least one of the course instructors to prepare an academic paper that (i) builds on the course content of one (or more) of the methods shared, and (ii) fits with their program, major or concentration of interest. Students will apply what they learn by producing a research paper for a peer-review journal.

The paper must be formatted for submission to a peer-review journal of topical relevance that the student selects jointly with the instructors who approve the selection. The journal must meet Cabell's standard of quality and be open to papers that are based on secondary sources only. The journal selected must also require articles that are no less than 5,000 words in length. The paper must include at least 10 sources from peer-review journals that are not part of the course readings.

Students must provide the specific formatting requirements from the approved journal and use that as the guideline when writing the paper. Note that students are not expected to submit a paper for consideration, just use the journal as your guide. For high-quality papers, you could pursue publication.

NOTE: For MaineMBA students, for the course to count towards a concentration (e.g., Finance, Sustainability, Blue Economy, Engineering Management), the journal, the topic, and the literature base of the paper must fit within the specific topic area and be approved by the Dean of the Graduate School of Business.

For Muskie graduate students, PhD students, and other graduate students, the topic should fit within your area of study.

Corequisite: students enrolled in the 1-credit INT 505 course must enroll concurrently in the 2-credit INT 504 course.

Prerequisite: must be in good graduate standing to enroll.

See required UMaine policies at https://umaine.edu/provost/faculty-staff-resources/syllabus-guidelines-for-faculty/

COURSE POLICIES[1]

Attendance & Participation Policy

Maine Law's current attendance policy is listed in the Student Handbook, which is available on the MyLaw Portal. Please include your attendance policy for the class consistent with Maine Law School's attendance policy.

Class Recording Policy

The recording of classes is prohibited without permission. All course material will be posted through Brightspace.

If you are requesting the recording of classes pursuant to the Americans with Disabilities Act or in the case of exceptional circumstances, such as severe illness or hospitalization, you should contact the Associate Dean of Student Services.

COURSE SCHEDULE

Date	Topic	Instructor	Module Description & Assignments
Week 1: Sept 4	1. *Course Overview* 2. *Method and Problem-Orientation*	Prof. Paul Mayewski, Prof. Charles Norchi, Dr. Pips Veazey	Complex problems are often identified within the context of a single discipline, but they require solutions based on multiple disciplines that not merely work together, but critically, move beyond disciplinary boundaries. What is a problem, what is complexity, what makes problems complex, how does the prospective problem-solver select a suitable method? Students will engage these tasks throughout the course: (1) Goal clarification, (2) Trend Analysis (what happened), (3) Factor Analysis (why it happened), (4) Projection, and (5) Alternative Futures/Plausible Scenarios.

[1] You should refer to the Syllabus Addendum located in the Syllabus Addendum module for information on Maine Law and University of Maine System policies, including the academic integrity policy, disability accommodations, Title IX, and inclement weather.

			Readings: Laswell, Harold D., *A Pre-View of Policy Sciences*, first three chapters Mitchell, Melanie., *Complexity: A Guided Tour,* chapter one
Week 2	*Policy Sciences and World Public Order*	Prof. Charles Norchi & Prof. Amanda Lynch	In this module we will apply Policy Sciences to critical challenges confronting the public order of the world community: war, international organizations and climate extremes. ***Readings:*** IPCC 6th Assessment Report (excerpts) Visit the World Meteorological Organization website: https://public.wmo.int/en/our-mandate/what-we-do From first class, review Laswell, Harold D., *A Pre-View of Policy Sciences*, first three chapters Norchi, *Method in International Systems and Law* Brunk & Hakimi, Russia, *Ukraine and the Future of World Order* Schelling, *The Astonishing Legacy of Hiroshima* (Nobel Prize Lecture) ***Recommended:*** McDougal, Lasswell, Reisman, *The World Constitutive Process of Authoritative Decision*
Week 3	*Climate change - the Major Security Issue of the 21st Century*	Prof. Paul Mayewski	Climate change permeates every aspect of our collective (human and ecosystem) existence. Understanding the role of climate change requires a basic understanding of the controls, impacts, linear and non-linear change, and predictions for the future. We will examine several interdisciplinary problem-solving tools/methods (eg., ClimateReanalyzer, Plausible Scenario Planning, climate reanalysis vs global circulation models, EN-ROADS) that offer insights into climate change challenges. ***Readings***: *Intergovernmental Panel on Climate Change, Climate Change 2023 Synthesis Report Summary for Policymakers* 1971 chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf
Week 4	*Geospatial Technologies*	Prof. Firooza Pavri	Geospatial technologies encompass a range of tools to map Earth's physical and social systems. These technologies are used across a wide range of disciplines and provide vital information to decision-makers. This module considers some applications of geospatial and

			remote sensing technologies that can be used to monitor and analyze change across different contexts. ***Readings:*** Frost, G. V. et al. (2022). *Arctic Report Card* 2022: Tundra Greenness. https://doi.org/10.25923/g8w3-6v31 Myers-Smith, I. H., Kerby, J. T., Phoenix, G. K., Bjerke, J. W., Epstein, H. E., Assmann, J. J., John, C., Andreu-Hayles, L., Angers-Blondin, S., Beck, P. S. A., Berner, L. T., Bhatt, U. S., Bjorkman, A. D., Blok, D., Bryn, A., Christiansen, C. T., Cornelissen, J. H. C., Cunliffe, A. M., Elmendorf, S. C., … Wipf, S. (2020). Complexity revealed in the greening of the Arctic. *Nature Climate Change*, 10(2), 106–117. https://doi.org/10.1038/s41558-019-0688-1 Joksimovic, S., et al. (2023) Opportunities of artificial intelligence for supporting complex problem-solving: Findings from a scoping review.
Week 5	*Computational Modeling, Engineering, and Computer Science for Health Challenges*	Dean Giovanna Guidoboni	In this class, we delve into the paramount importance of understanding the intricacies of data in medicine. Through rigorous exploration, we uncover how decisions made by medical professionals hinge on data, often revered as infallible, yet fraught with errors stemming from machinery, operators, and patient conditions. By dissecting these complexities, we aim to mitigate negative outcomes and foster a deeper comprehension of the role of sensors and data in healthcare. ***Readings: TBD***
Week 6	*AI/Cybersecurity*	Prof. Ali Abedi and Dr. Vikas Dhiman	Current climate models either rely on physics-based modeling or previously collected data. AI and wireless sensing can be combined to create a digital twin of the climate where historical data, physics-based models, and real-time data are used to provide a clear picture of the climate and provide more accurate predictions. ***Readings:*** Naderi, S., Bundy, K., Whitney, T. et al. Sharing Wireless Spectrum in the Forest Ecosystems Using Artificial Intelligence and Machine Learning. Int J Wireless Inf Networks 29, 257–268 (2022). https://doi.org/10.1007/s10776-022-00572-9

			V. Piroumian, "Making Digital Twins Work," in Computer, vol. 56, no. 1, pp. 42-51, Jan. 2023, doi: 10.1109/MC.2022.3206101.
Week 7	*Negotiation & Teamwork Methods in Applied Complex Problem-Solving Contexts*	Dr. Allison Hodgkins and Dr. Pips Veazey with Anne Heberger Marino	This module first explores the process of negotiation: phases, strategy, actors, common challenges, and the impact of intangible factors like culture, power, or emotions. The module will combine a conceptual overview with experiential role-playing simulation drawn from themes of earlier modules. Core concepts include the nature of conflict, distributive versus integrative problem-solving approaches, principles of negotiation analysis, and the role of agents. Second, research is consistently performed in large, interdisciplinary teams. Highly effective teams work to develop a shared understanding of their work and engage in explicit conversations to define a healthy team culture with supportive processes. A handful of conditions of reliability differentiate high-performing and low-performing teams. This module introduces research-informed principles and strategies to consider when forming and launching a new team and discusses group concept mapping as a mixed methods research approach. ***Readings***: Laustsen, C.E., Westergren, A., Petersson, P. et al. Conceptualizing researchers' perspectives on involving professionals in research: a group concept mapping study. Health Res Policy Sys 19, 39 (2021). https://doi.org/10.1186/s12961-021-00685-2 Lawrence-Dill CJ, Allscheid RL, Boaitey A, Bauman T, Buckler ES IV, Clarke JL, et al. (2022) Ten simple rules to ruin a collaborative environment. PLoS Comput Biol 18(4): e1009957. https://doi.org/10.1371/journal.pcbi.1009957 Hall, Kara & Vogel, Amanda & Croyle, Robert. (2019). Strategies for Team Science Success Handbook of Evidence-Based Principles for Cross-Disciplinary Science and Practical Lessons Learned from Health Researchers: Handbook of Evidence-Based Principles for Cross-Disciplinary Science and Practical Lessons Learned from Health Researchers. 10.1007/978-3-030-20992-6. Chapter 45

			Castañeda, Pablo MD. (2022) The Art of Negotiation: Avoiding Positional Bargaining and Getting to Yes. Journal of Pediatric Orthopaedics 42():p S47-S49 | DOI: 10.1097/BPO.0000000000002059 (two pages) Fisher, R., Ury, W. L., & Patton, B. (2011). Getting to yes: Negotiating agreement without giving in. Penguin. Chapters I.II.III (147 pages) ***Optional readings***: (please read introduction and conclusion, skim rest): Faten Ghosn, (2010) Getting to the Table and Getting to Yes: An Analysis of International Negotiations, International Studies Quarterly, Volume 54, Issue 4, Pages 1055–1072, https://doi.org/10.1111/j.1468-2478.2010.00626.x Funken, Katja, (2001) The Pros and Cons of Getting to Yes - Shortcomings and Limitations of Principled Bargaining in Negotiation and Mediation. Available at SSRN: https://ssrn.com/abstract=293381 or http://dx.doi.org/10.2139/ssrn.293381
Week 8	NGO Perspectives on Complex-Problem Solving	Dr. Ray Salvatore Jennings & Dr. Adrian Cerezo	1. The goal of this module is to consider multiple human development dimensions (including social ecology, anthropology, child development, human dimensions of sustainable development, humanitarian emergencies, equity, and justice) and how they intersect with complex global challenges such as climate change and the sustainable development policy agenda. 2. This module will also examine the manner in which **climate change** interacts with, and in many cases amplifies the impacts of multiple drivers of instability and fragility in nation-states. These adjacent factors include conflict and violence, poor governance, gender inequality, increasing levels of debt, livelihood deficits, displacement, food insecurity, poor social cohesion, high levels of mis/dis/malinformation and an erosion of basic service provision. Together, factors like these create a "polycrisis" that requires systems thinking, deep contextual understanding, and coordinated effort by assistance providers addressing these complex emergencies. ***Readings:*** "A polycrisis of climate change, food insecurity, socio-economic inequality, and conflict intensity?" Alva Linner (Spring)

			at https://lup.lub.lu.se/luur/download?func=downloadFile&recordOId=9123453&fileOId=9123455. (pp 1-24, and 68-73). "Equitable Resource Governance Helps Build Peace" (Boudreaux and Abrahams) at https://www.land-links.org/2023/05/equitable-resource-governance-helps-build-peace/ (blog pp. 1-2) "Turning Warter Crises into Opportunities for Peacebuilding" at https://waterpeacesecurity.org/ (overview on home page) "Breaking Silos: Climate Change, Security, and Humanitarian Action" at https://councilonstrategicrisks.org/wp-content/uploads/2023/01/41-BreakingSilos.pdf (pp.1-10) https://www.capita.org/framing-paper-protecting-our-future-now chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://arnec.net/sites/default/files/2022-12/ARNEC-scoping%20study-web%202022-12-29.pdf Ponguta, L. A., Aragón, C. A., Varela, L. R., Moore, K., Hein, S., & Cerezo, A. (2020). Sector-wide analysis of early childhood development and education in emergencies in Colombia and considerations to strengthen systems globally. *New Directions for Child and Adolescent Development*, 2020, 103– 123. https://doi.org/10.1002/cad.20367
Week 9	*Presentations*	*Lightning Rounds and Critique*	Preliminary short student presentations
Week 10	Government & Military Perspectives	Prof. James Kraska	The military has long standing experience in applying well-honed methods to complex problems in challenging operational environments. Professor James Kraska will explain and lead the class in an application of a methodology employed by the United States Navy to a concrete and complex set of problems. ***Reading:*** The Commander's Handbook on the Law of Naval Operations

Week 11	*Business & Entrepreneurship Perspectives*	Dean Norm O'Reilly with Patrick Arnold	The decision is a core element of any problem-solving effort. This class provides a framework and background for effectively making decisions. It considers both the psychology of the business decision and the role of stakeholders and external entities in those decisions. ***Reading:*** George Foster & Norm O'Reilly (2020): Sporting Club Stakeholder Alignment: Key Stakeholder Relationships and their Association with On-The-Field and Off-The-Field Performance, Journal of Global Sport Management, DOI: 10.1080/24704067.2020.1805213 Abeza, G., Boesen, M. Q., O'Reilly, N., & Braunstein-Minkove, J. R. (2020). Qatar 2022 World Cup: Designing a Context-Based Decision-Making Approach. *Case Studies in Sport Management*, *9*(1), 7-11. Retrieved Jul 28, 2023, from https://doi.org/10.1123/cssm.2018-0025 One additional reading TBD
Week 12	*Presentations*	Deep Dives: Round 1	Final student presentations
Week 13	*Presentations*	Deep Dives: Round 2	Final student presentations
Dec. 4	*Course Conclusion: Methods and Complexity in Problem-Solving*		

Grading for INT 504:
Short papers 50%
Project and presentation 50%

Grading for INT 505:
Paper proposal 30%
Final paper 70%

A+ (97–100), A (93–96), A- (90–92), B+ (87–89), B (83–86), B- (80–82)

INT - 540 - Advances in Materials I

Graduate New Course Proposal Form - 2023/24 AY

General Catalog Information

Graduate New Course Proposal Form

Read before you begin

FILL IN all fields required marked with an *.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

Requested Action: ***Note*: A complete syllabus is required for all new courses.**

Please be sure that all elements required for a syllabus at the University of Maine are present. We recommend you work closely with the syllabus guidelines found at www.umaine.edu/citl.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

Please attach any required files by navigating to the right side menu and clicking "Files".

Graduate course proposals, modifications, or eliminations must be submitted to the Graduate School no later than the 3rd of each month. Please refer to the Graduate School website for the Curriculum Committee meetings schedule as well as instructions on completing this form. [https://umaine.edu/graduate/facultystaff-resources/curriculum-committee/]

Syllabus* ☑ Attached

REASON FOR NEW COURSE* Success of many engineering applications depends on design, fabrication, and utilization of materials with specific sets of functional properties. Industries that seek employees with deeper understanding in materials include manufacturing, aerospace, infrastructure, chemical processing, forest products, electronics, metals, ceramics, polymers, composites, health care, and biomedical technologies. To address the need for employees with understanding in Materials, the University of Maine has recently approved a specialty in Materials Science & Engineering within the I-PhD program and is also planning a Graduate Certificate in this area.

Department* Interdisciplinary Studies

New Course: * ☑ New Course ☐ Experimental (One time offering)

EFFECTIVE SEMESTER:

Semester* Summer

Year* 2024

PROPOSED CATALOG DESCRIPTION:

Course Designator* INT

Proposed Course #* 540

Course Type: *	Engineering (PSM)
Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max Length is 30 characters). *	Advances in Materials I
Long Course Title*	Advances in Materials I
Course Description:*	This course will emphasize the fundamental concepts to understand the relationship between structure and properties of different types of materials, and how they relate to various engineering applications. Course Note: MEE 522 and INT 540 can not both be taken for degree credit"
Prerequisites:	Undergraduate degree in any STEM Field, or permission of the instructor.
Corequisites:	

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Credit Hours: *	3
Can this course be repeated for credit? *	○ Yes ◉ No

If YES, total number of credits allowed:	**If YES, total number of completions allowed:**

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.*

☐ Distance Synchronous Learning ☑ Hybrid/Blended ☐ Hyflex
☐ In-Person ☐ Online (Asynchronous)

(For information on Course Components Definitions please see: UMS Data Governance Course Components Definitions)

Course Components (type of course/used by Student Records for MaineStreet)*

☐ Applied Music ☐ Clinical ☐ Field Experience
☐ Independent Study ☐ Laboratory ☑ Lecture
☐ Recitation ☐ Research ☐ Seminar ☐ Simulation
☐ Studio ☐ Thesis ☐ Travel Course

When will this course typically be offered * ☐ Fall ☑ Summer ☐ Spring ☐ Alternating ☐ Variable

Text(s) Planned for Use*

- Class Handouts to be provided.
- Materials Science and Engineering, William D. Callister and David G. Rethwisch, Wiley.
- The Physics and Chemistry of Nano-solids, by Frank J. Owens Charles P. Poole, Wiley.
- Misc research and review articles.

Course Instructor*	Sharmila M. Mukhopadhyay, Director of FIRST

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*	☐ Yes ☑ No

Proposed Resources: Does the course addition or modification require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?*	☑ No. The academic unit will not request additional resources for the course ☐ Yes

Units Affected: What other academic units are affected (e.g. course overlap, prerequisites)? Have the affected units been consulted? Any concerns expressed? Please explain.*	N/A

Course Frequency: Does the content of this course overlap significantly with other University courses? If so, list the course, explain the overlap, and justify the need for the proposed course.*	N/A

Advances in Materials I
INT-540 & MEE-520

Course Information: Advances in Materials I
INT-540 & MEE-520
Date and Time TBD

Credit Hours: 3 credits

Course Delivery Method:
Hybrid blended

Instructors: S.M. Mukhopadhyay (coordinator) with additional instructors (TBD)

Textbooks & References:

- Class Handouts to be provided.
- Materials Science and Engineering, William D. Callister and David G. Rethwisch, Wiley.
- The Physics and Chemistry of Nano-solids, by Frank J. Owens Charles P. Poole, Wiley.
- Misc research and review articles.

Description: This course will emphasize the fundamentals concepts to understand the relationship between structure and properties of different types of materials, and how they relate to various engineering applications.

Prerequisite:
Undergraduate degree in any STEM Field, or permission of the instructor.

Students are expected to have familiarity with the following prerequisite topics covered in STEM undergrad courses such as MEE 320 or equivalent.

- Periodic Table, Atomic Structure & Inter-atomic Bonds,
- Basic understanding of solids: Crystal structure and Microstructure
- Basic materials classification: Metals, Ceramics, Polymers, Composites
- Thermodynamics and Kinetics

Note: Summary notes and reading materials from prerequisite topics will be made available to students. In addition, these topics will be revised during the first few sessions and a prerequisite test will be held on week #3.

Student Learning Objectives:
At the end of the course, the student with have an understanding of how the composition, interatomic bonds, and microscopic/macroscopic structure relate to their properties and how this understanding can enable the selection, design, and development of materials for different applications.

Lecture Topics:
3 hrs.: Background revision - Fundamental concepts of materials physics, chemistry, solid mechanics
3 hrs.: Interatomic Bonds & Solid Properties
3 hrs.: Metallic Solids
3 hrs.: Ionic and Covalent Solids
3 hrs.: Ceramics & Semiconductors

3 hrs.: Glasses
3 hrs.: Polymers
3 hrs.: Natural biomaterials
3 hrs.: Nanomaterials, Colloids & Hybrids
3 hrs.: Composites
3 hrs. Mechanical properties
3 hrs.: Electrical and Electronic properties
3 hrs.: Chemical interactions, Surfaces, and Interfaces
3 hrs.: Class presentations

TERM PAPER:

Each student will need to research a topic related to materials design, development or application and make a short presentation for open discussion in class. Topic selection can be done individually or in partnership with a fellow student (for collaborative research or more extensive coverage). You are advised to identify the term paper by week 5. Please note:

- A copy of the presentation slides should be uploaded a week prior to the presentation.
- Term Paper will be evaluated using the following criteria: (i) Student's ability to extend the concepts discussed in class to the selected application; (ii) The relevance of the overall scope and topic; (iii) Depth of understanding; and (iv) Clarity of presentation and interest generated among peers.

TESTING AND GRADING POLICY:

Prerequisite test	15%
Homework	10%
Test # 1	25%
Term Paper	25%
Final	25%

Additional Information:

- **Academic Honesty Statement:** Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University. Please see the University of Maine System's Academic Integrity Policy listed in the Board Policy Manual as Policy 314: https://www.maine.edu/board-of-trustees/policy-manual/section-314/
- **Students Accessibility Services Statement [This should be customized to include the instructor's name]:** If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, 121 East Annex, 581.2319, as early as possible in the term. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with me (the instructor of the course) privately as soon as possible.
- **Course Schedule Disclaimer (Disruption Clause):** In the event of an extended disruption of normal classroom activities (due to COVID-19 or other long-term disruptions), the format for this
- course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

- **Observance of Religious Holidays/Events:** The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department or University. At the discretion of the instructor, such coursework could be due before or after the examination or assignment. No adverse or prejudicial effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.
- **Sexual Violence Policy:**

Sexual Discrimination Reporting

The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of **sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination** involving members of the campus, **your teacher is required to report** this information to Title IX Student Services or the Office of Equal Opportunity.

Other resources: The resources listed below can offer support but may have to report the incident to others who can help:

For *support services on campus*: **Title IX Student Services: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911**. Or see the OSAVP website for a complete list of services.

INT - 541 - Advances in Materials II

Graduate New Course Proposal Form - 2023/24 AY

General Catalog Information

Graduate New Course Proposal Form

Read before you begin

FILL IN all fields required marked with an *.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

Requested Action: ***Note*: A complete syllabus is required for all new courses.**

Please be sure that all elements required for a syllabus at the University of Maine are present. We recommend you work closely with the syllabus guidelines found at www.umaine.edu/citl.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

Please attach any required files by navigating to the right side menu and clicking "Files".

Graduate course proposals, modifications, or eliminations must be submitted to the Graduate School no later than the 3rd of each month. Please refer to the Graduate School website for the Curriculum Committee meetings schedule as well as instructions on completing this form. [https://umaine.edu/graduate/facultystaff-resources/curriculum-committee/]

Syllabus* ☑ Attached

REASON FOR NEW COURSE*

Rationale: Success of many engineering applications depends on design, fabrication, and utilization of materials with specific sets of functional properties. Industries that seek employees with deeper understanding in materials include manufacturing, aerospace, infrastructure, chemical processing, forest products, electronics, metals, ceramics, polymers, composites, health care, and biomedical technologies. To address their need for employees with understanding in Materials, the University of Maine has recently approved a specialty in Materials Science & Engineering within the I-PhD program and is also planning a Graduate Certificate in this area. **This two-course sequence will serve as the core courses for these programs, and as technical electives for MEE and other STEM programs at UMaine.** Completion of these courses would make it easier for potential employers to identify students with advanced materials training from within a larger pool of applicants.

Department* Interdisciplinary Studies

New Course: * ☑ New Course ☐ Experimental (One time offering)

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

PROPOSED CATALOG DESCRIPTION:

Course Designator* INT

Proposed Course #* 541

Course Type: * Engineering (PSM)

Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max Length is 30 characters). * Advances in Materials II

Long Course Title* Advances in Materials II

Course Description:* The overall goal of the Advanced Materials Course sequence is to provide the student with a broader understanding of how the structure of solids relate to their properties and how this understanding can enable the design, development, and manufacturing of different types of materials and products. This course is the second offering in the sequence, and will emphasize characterization, processing, fabrication and application of advanced materials. Applications covered will include structural chemical, biological, electrical, thermal, magnetic, optical, and multifunctional devices.

Course Note: MEE 524 and INT 541can not both be taken for degree credit"

Prerequisites: Advances In Materials-I (MEE 522) or permission of the instructor

Corequisites:

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Credit Hours: * 3

Can this course be repeated for credit? * ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.* ☐ Distance Synchronous Learning ☑ Hybrid/Blended ☐ Hyflex ☐ In-Person ☐ Online (Asynchronous)

(For information on Course Components Definitions please see: UMS Data Governance Course Components Definitions)

Course Components (type of course/used by Student Records for MaineStreet)* ☐ Applied Music ☐ Clinical ☐ Field Experience ☐ Independent Study ☐ Laboratory ☑ Lecture ☐ Recitation ☐ Research ☐ Seminar ☐ Simulation ☐ Studio ☐ Thesis ☐ Travel Course

When will this course typically be offered * ☑ Fall ☐ Summer ☐ Spring ☐ Alternating ☐ Variable

Text(s) Planned for Use*	• Class Handouts to be provided. • Materials Science and Engineering, William D. Callister and David G. Rethwisch, Wiley. • The Physics and Chemistry of Nano-solids, by Frank J. Owens Charles P. Poole, Wiley. • Misc research and review papers.
Course Instructor*	Sharmila M. Mukhopadhyay, Director of FIRST (with guest lectures TBD)
Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*	☐ Yes ☑ No
Proposed Resources: Does the course addition or modification require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?*	☑ No. The academic unit will not request additional resources for the course ☐ Yes
Units Affected: What other academic units are affected (e.g. course overlap, prerequisites)? Have the affected units been consulted? Any concerns expressed? Please explain.*	N/A
Course Frequency: Does the content of this course overlap significantly with other University courses? If so, list the course, explain the overlap, and justify the need for the proposed course.*	N/A

Advances in Materials II
INT 541 & MEE 524

Course Information: Advances in Materials II
INT-541 & MEE-524
Date and Time TBD

Credit Hours: 3 credits; INT 541 and MEE 524 can not both be taken for degree credit.

Course Description:
The overall goal of the Advanced Materials Course sequence is to provide the student with a broader understanding of how the structure of solids relate to their properties and how this understanding can enable the design, development, and manufacturing of different types of materials and products. This course is the second offering in the sequence, and will emphasize characterization, processing, fabrication and application of advanced materials. Applications covered will include structural chemical, biological, electrical, thermal, magnetic, optical, and multifunctional devices.

Delivery Method:
Hybrid/Blended
Lectures will be delivered on-line, and the course will end with a lab demonstration in materials fabrication, characterization, and testing (FIRST, ASCC, FBRI).

Instructors: S.M. Mukhopadhyay (coordinator) with additional instructors (TBD)

Prerequisite: Advances In Materials-I or permission of the instructor

Textbooks & References:
- Class Handouts to be provided.
- Materials Science and Engineering, William D. Callister and David G. Rethwisch, Wiley.
- The Physics and Chemistry of Nano-solids, by Frank J. Owens Charles P. Poole, Wiley.
- Misc research and review papers.

Student Learning Objectives:
At the end of the course, the student with develop an understanding of materials characterization, processing, and fabrication techniques. They will also understand how the structural, chemical, biological, electrical, thermal, magnetic, and optical properties of materials can enable a wide variety of engineering devices and products.

LECTURE TOPICS (Tentative):
- Electrical and Electronic materials and devices (3 hrs.)
- Optical and Dielectric applications (3 hrs.)
- Chemical and catalytic applications (3 hrs.)
- Environmental application of materials (3 hrs.)
- Thermal properties and applications (3 hrs.)
- Materials for biomedical devices (3 hrs.)
- Magnetic materials and applications (3 hrs.)
- Materials Characterization - Microscopy (3 hrs.)
- Materials Characterization – Spectroscopy (3 hrs.)

- Materials processing – 3 hrs.
- Surface modification and thin films – 3 hrs
- On-site- tour - Materials Characterization and Fabrication – (9 hours)

TERM PAPER:

Each student will need to research a topic related to materials design, development or application and make a short presentation for open discussion in class. Topic selection can be done individually or in partnership with a fellow student (for collaborative research or more extensive coverage). You are advised to identify the term paper by week 5. Please note:

- A copy of the presentation slides should be uploaded a week prior to the presentation.
- Term Paper will be evaluated using the following criteria: (i) Student's ability to extend the concepts discussed in class to the selected application; (ii) The relevance of the overall scope and topic; (iii) Depth of understanding; and (iv) Clarity of presentation and interest generated among peers.

TESTING AND GRADING POLICY:

Homework	10%
Test # 1	25%
Test # 2	25%
Term paper	25%
Tour review	15%

ADDITIONAL INFORMATION:

- **Academic Honesty Statement:** Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University. Please see the University of Maine System's Academic Integrity Policy listed in the Board Policy Manual as Policy 314: https://www.maine.edu/board-of-trustees/policy-manual/section-314/
- **Students Accessibility Services Statement [This should be customized to include the instructor's name]:** If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, 121 East Annex, 581.2319, as early as possible in the term. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with me (the instructor of the course) privately as soon as possible.
- **Course Schedule Disclaimer (Disruption Clause):** In the event of an extended disruption of normal classroom activities (due to COVID-19 or other long-term disruptions), the format for this
- course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.
- **Observance of Religious Holidays/Events:** The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department or University. At the discretion of the instructor, such coursework could be due before or after the examination or assignment. No adverse or

prejudicial effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.

- **Sexual Violence Policy:**

Sexual Discrimination Reporting

The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of **sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination** involving members of the campus, **your teacher is required to report** this information to Title IX Student Services or the Office of Equal Opportunity.

Other resources: The resources listed below can offer support but may have to report the incident to others who can help:

For *support services on campus*: **Title IX Student Services: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911.** Or see the OSAVP website for a complete list of services.

MEE - 522 - Advances in Materials I

Graduate New Course Proposal Form - 2023/24 AY

General Catalog Information

Graduate New Course Proposal Form

Read before you begin

FILL IN all fields required marked with an *.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

Requested Action: ***Note*: A complete syllabus is required for all new courses.**

Please be sure that all elements required for a syllabus at the University of Maine are present. We recommend you work closely with the syllabus guidelines found at www.umaine.edu/citl.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

Please attach any required files by navigating to the right side menu and clicking "Files".

Graduate course proposals, modifications, or eliminations must be submitted to the Graduate School no later than the 3rd of each month. Please refer to the Graduate School website for the Curriculum Committee meetings schedule as well as instructions on completing this form. [https://umaine.edu/graduate/facultystaff-resources/curriculum-committee/]

Syllabus* ☑ Attached

REASON FOR NEW COURSE* Success of many engineering applications depends on design, fabrication, and utilization of materials with specific sets of functional properties. Industries that seek employees with deeper understanding in materials include manufacturing, aerospace, infrastructure, chemical processing, forest products, electronics, metals, ceramics, polymers, composites, health care, and biomedical technologies. To address the need for employees with understanding in Materials, the University of Maine has recently approved a specialty in Materials Science & Engineering within the I-PhD program and is also planning a Graduate Certificate in this area.

Department* Mechanical Engineering

New Course: * ☑ New Course ☐ Experimental (One time offering)

EFFECTIVE SEMESTER:

Semester* Summer **Year*** 2024

PROPOSED CATALOG DESCRIPTION:

Course Designator* MEE **Proposed Course #*** 522

Course Type: * Engineering (PSM)

Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max Length is 30 characters). * Advances in Materials I

Long Course Title* Advances in Materials I

Course Description:* This course will emphasize the fundamental concepts to understand the relationship between structure and properties of different types of materials, and how they relate to various engineering applications.

Course Note: MEE 522 and INT 540 can not both be taken for degree credit"

Prerequisites: Undergraduate degree in any STEM Field, or permission of the instructor.

Corequisites:

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Credit Hours: * 3

Can this course be repeated for credit? * ○ Yes ◉ No

If YES, total number of credits allowed:	**If YES, total number of completions allowed:**

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.*

☐ Distance Synchronous Learning ☑ Hybrid/Blended ☐ Hyflex
☐ In-Person ☐ Online (Asynchronous)

(For information on Course Components Definitions please see: UMS Data Governance Course Components Definitions)

Course Components (type of course/used by Student Records for MaineStreet)*

☐ Applied Music ☐ Clinical ☐ Field Experience
☐ Independent Study ☐ Laboratory ☑ Lecture
☐ Recitation ☐ Research ☐ Seminar ☐ Simulation
☐ Studio ☐ Thesis ☐ Travel Course

When will this course typically be offered * ☐ Fall ☑ Summer ☐ Spring ☐ Alternating ☐ Variable

Text(s) Planned for Use*

- Class Handouts to be provided.
- Materials Science and Engineering, William D. Callister and David G. Rethwisch, Wiley.
- The Physics and Chemistry of Nano-solids, by Frank J. Owens Charles P. Poole, Wiley.
- Misc research and review articles.

Course Instructor*	Sharmila M. Mukhopadhyay, Director of FIRST
Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*	☐ Yes ☑ No
Proposed Resources: Does the course addition or modification require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?*	☑ No. The academic unit will not request additional resources for the course ☐ Yes
Units Affected: What other academic units are affected (e.g. course overlap, prerequisites)? Have the affected units been consulted? Any concerns expressed? Please explain.*	N/A

Course Frequency: Does the content of this course overlap significantly with other University courses? If so, list the course, explain the overlap, and justify the need for the proposed course.*	N/A

Advances in Materials I
INT-540 & MEE-520

Course Information: Advances in Materials I
INT-540 & MEE-520
Date and Time TBD

Credit Hours: 3 credits

Course Delivery Method:
Hybrid blended

Instructors: S.M. Mukhopadhyay (coordinator) with additional instructors (TBD)

Textbooks & References:

- Class Handouts to be provided.
- Materials Science and Engineering, William D. Callister and David G. Rethwisch, Wiley.
- The Physics and Chemistry of Nano-solids, by Frank J. Owens Charles P. Poole, Wiley.
- Misc research and review articles.

Description: This course will emphasize the fundamentals concepts to understand the relationship between structure and properties of different types of materials, and how they relate to various engineering applications.

Prerequisite:
Undergraduate degree in any STEM Field, or permission of the instructor.

Students are expected to have familiarity with the following prerequisite topics covered in STEM undergrad courses such as MEE 320 or equivalent.

- Periodic Table, Atomic Structure & Inter-atomic Bonds,
- Basic understanding of solids: Crystal structure and Microstructure
- Basic materials classification: Metals, Ceramics, Polymers, Composites
- Thermodynamics and Kinetics

Note: Summary notes and reading materials from prerequisite topics will be made available to students. In addition, these topics will be revised during the first few sessions and a prerequisite test will be held on week #3.

Student Learning Objectives:
At the end of the course, the student with have an understanding of how the composition, interatomic bonds, and microscopic/macroscopic structure relate to their properties and how this understanding can enable the selection, design, and development of materials for different applications.

Lecture Topics:
3 hrs.: Background revision - Fundamental concepts of materials physics, chemistry, solid mechanics
3 hrs.: Interatomic Bonds & Solid Properties
3 hrs.: Metallic Solids
3 hrs.: Ionic and Covalent Solids
3 hrs.: Ceramics & Semiconductors

3 hrs.: Glasses
3 hrs.: Polymers
3 hrs.: Natural biomaterials
3 hrs.: Nanomaterials, Colloids & Hybrids
3 hrs.: Composites
3 hrs. Mechanical properties
3 hrs.: Electrical and Electronic properties
3 hrs.: Chemical interactions, Surfaces, and Interfaces
3 hrs.: Class presentations

TERM PAPER:

Each student will need to research a topic related to materials design, development or application and make a short presentation for open discussion in class. Topic selection can be done individually or in partnership with a fellow student (for collaborative research or more extensive coverage). You are advised to identify the term paper by week 5. Please note:

- A copy of the presentation slides should be uploaded a week prior to the presentation.
- Term Paper will be evaluated using the following criteria: (i) Student's ability to extend the concepts discussed in class to the selected application; (ii) The relevance of the overall scope and topic; (iii) Depth of understanding; and (iv) Clarity of presentation and interest generated among peers.

TESTING AND GRADING POLICY:

Prerequisite test	15%
Homework	10%
Test # 1	25%
Term Paper	25%
Final	25%

Additional Information:

- **Academic Honesty Statement:** Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University. Please see the University of Maine System's Academic Integrity Policy listed in the Board Policy Manual as Policy 314: https://www.maine.edu/board-of-trustees/policy-manual/section-314/
- **Students Accessibility Services Statement [This should be customized to include the instructor's name]:** If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, 121 East Annex, 581.2319, as early as possible in the term. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with me (the instructor of the course) privately as soon as possible.
- **Course Schedule Disclaimer (Disruption Clause):** In the event of an extended disruption of normal classroom activities (due to COVID-19 or other long-term disruptions), the format for this
- course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

- **Observance of Religious Holidays/Events:** The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department or University. At the discretion of the instructor, such coursework could be due before or after the examination or assignment. No adverse or prejudicial effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.
- **Sexual Violence Policy:**

Sexual Discrimination Reporting

The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of **sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination** involving members of the campus, **your teacher is required to report** this information to Title IX Student Services or the Office of Equal Opportunity.

Other resources: The resources listed below can offer support but may have to report the incident to others who can help:

For *support services on campus*: **Title IX Student Services: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911**. Or see the OSAVP website for a complete list of services.

MEE - 524 - Advances in Materials II

Graduate New Course Proposal Form - 2023/24 AY

General Catalog Information

Graduate New Course Proposal Form

Read before you begin

FILL IN all fields required marked with an *.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

Requested Action: ***Note*: A complete syllabus is required for all new courses.**

Please be sure that all elements required for a syllabus at the University of Maine are present. We recommend you work closely with the syllabus guidelines found at www.umaine.edu/citl.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

Please attach any required files by navigating to the right side menu and clicking "Files".

Graduate course proposals, modifications, or eliminations must be submitted to the Graduate School no later than the 3rd of each month. Please refer to the Graduate School website for the Curriculum Committee meetings schedule as well as instructions on completing this form. [https://umaine.edu/graduate/facultystaff-resources/curriculum-committee/]

Syllabus* ☑ Attached

REASON FOR NEW COURSE*

Rationale: Success of many engineering applications depends on design, fabrication, and utilization of materials with specific sets of functional properties. Industries that seek employees with deeper understanding in materials include manufacturing, aerospace, infrastructure, chemical processing, forest products, electronics, metals, ceramics, polymers, composites, health care, and biomedical technologies. To address their need for employees with understanding in Materials, the University of Maine has recently approved a specialty in Materials Science & Engineering within the I-PhD program and is also planning a Graduate Certificate in this area. **This two-course sequence will serve as the core courses for these programs, and as technical electives for MEE and other STEM programs at UMaine.** Completion of these courses would make it easier for potential employers to identify students with advanced materials training from within a larger pool of applicants.

Department* Mechanical Engineering

New Course: * ☑ New Course ☐ Experimental (One time offering)

EFFECTIVE SEMESTER:

Semester* Fall **Year*** 2024

PROPOSED CATALOG DESCRIPTION:

Course Designator* MEE **Proposed Course #*** 524

Course Type: * Engineering (PSM)

Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max Length is 30 characters). * Advances in Materials II

Long Course Title* Advances in Materials II

Course Description:* The overall goal of the Advanced Materials Course sequence is to provide the student with a broader understanding of how the structure of solids relate to their properties and how this understanding can enable the design, development, and manufacturing of different types of materials and products. This course is the second offering in the sequence, and will emphasize characterization, processing, fabrication and application of advanced materials. Applications covered will include structural chemical, biological, electrical, thermal, magnetic, optical, and multifunctional devices.

Course Note: MEE 524 and INT 541can not both be taken for degree credit"

Prerequisites: Advances In Materials-I (MEE 522) or permission of the instructor

Corequisites:

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Credit Hours: * 3

Can this course be repeated for credit? * ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? * ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation. * ☐ Distance Synchronous Learning ☑ Hybrid/Blended ☐ Hyflex ☐ In-Person ☐ Online (Asynchronous)

(For information on Course Components Definitions please see: UMS Data Governance Course Components Definitions)

Course Components (type of course/used by Student Records for MaineStreet)* ☐ Applied Music ☐ Clinical ☐ Field Experience ☐ Independent Study ☐ Laboratory ☑ Lecture ☐ Recitation ☐ Research ☐ Seminar ☐ Simulation ☐ Studio ☐ Thesis ☐ Travel Course

When will this course typically be offered * ☑ Fall ☐ Summer ☐ Spring ☐ Alternating ☐ Variable

Text(s) Planned for Use*	• Class Handouts to be provided. • Materials Science and Engineering, William D. Callister and David G. Rethwisch, Wiley. • The Physics and Chemistry of Nano-solids, by Frank J. Owens Charles P. Poole, Wiley. • Misc research and review papers.
Course Instructor*	Sharmila M. Mukhopadhyay, Director of FIRST (with guest lectures TBD)
Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*	☐ Yes ☑ No
Proposed Resources: Does the course addition or modification require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?*	☑ No. The academic unit will not request additional resources for the course ☐ Yes
Units Affected: What other academic units are affected (e.g. course overlap, prerequisites)? Have the affected units been consulted? Any concerns expressed? Please explain.*	N/A
Course Frequency: Does the content of this course overlap significantly with other University courses? If so, list the course, explain the overlap, and justify the need for the proposed course.*	N/A

Advances in Materials II
INT 541 & MEE 524

Course Information: Advances in Materials II
INT-541 & MEE-524
Date and Time TBD

Credit Hours: 3 credits

Course Description:
The overall goal of the Advanced Materials Course sequence is to provide the student with a broader understanding of how the structure of solids relate to their properties and how this understanding can enable the design, development, and manufacturing of different types of materials and products. This course is the second offering in the sequence, and will emphasize characterization, processing, fabrication and application of advanced materials. Applications covered will include structural chemical, biological, electrical, thermal, magnetic, optical, and multifunctional devices. **INT 541 and MEE 524 cannot both be taken for degree credit.**

Delivery Method:
Hybrid/Blended
Lectures will be delivered on-line, and the course will end with a lab demonstration in materials fabrication, characterization, and testing (FIRST, ASCC, FBRI).

Instructors: S.M. Mukhopadhyay (coordinator) with additional instructors (TBD)

Prerequisite: Advances In Materials-I or permission of the instructor

Textbooks & References:
- Class Handouts to be provided.
- Materials Science and Engineering, William D. Callister and David G. Rethwisch, Wiley.
- The Physics and Chemistry of Nano-solids, by Frank J. Owens Charles P. Poole, Wiley.
- Misc research and review papers.

Student Learning Objectives:
At the end of the course, the student with develop an understanding of materials characterization, processing, and fabrication techniques. They will also understand how the structural, chemical, biological, electrical, thermal, magnetic, and optical properties of materials can enable a wide variety of engineering devices and products.

LECTURE TOPICS (Tentative):
- Electrical and Electronic materials and devices (3 hrs.)
- Optical and Dielectric applications (3 hrs.)
- Chemical and catalytic applications (3 hrs.)
- Environmental application of materials (3 hrs.)
- Thermal properties and applications (3 hrs.)
- Materials for biomedical devices (3 hrs.)
- Magnetic materials and applications (3 hrs.)
- Materials Characterization - Microscopy (3 hrs.)

- Materials Characterization – Spectroscopy (3 hrs.)
- Materials processing – 3 hrs.
- Surface modification and thin films – 3 hrs
- On-site- tour - Materials Characterization and Fabrication – (9 hours)

TERM PAPER:

Each student will need to research a topic related to materials design, development or application and make a short presentation for open discussion in class. Topic selection can be done individually or in partnership with a fellow student (for collaborative research or more extensive coverage). You are advised to identify the term paper by week 5. Please note:

- A copy of the presentation slides should be uploaded a week prior to the presentation.
- Term Paper will be evaluated using the following criteria: (i) Student's ability to extend the concepts discussed in class to the selected application; (ii) The relevance of the overall scope and topic; (iii) Depth of understanding; and (iv) Clarity of presentation and interest generated among peers.

TESTING AND GRADING POLICY:

Homework	10%
Test # 1	25%
Test # 2	25%
Term paper	25%
Tour review	15%

ADDITIONAL INFORMATION:

- **Academic Honesty Statement:** Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University. Please see the University of Maine System's Academic Integrity Policy listed in the Board Policy Manual as Policy 314: https://www.maine.edu/board-of-trustees/policy-manual/section-314/
- **Students Accessibility Services Statement [This should be customized to include the instructor's name]:** If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, 121 East Annex, 581.2319, as early as possible in the term. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with me (the instructor of the course) privately as soon as possible.
- **Course Schedule Disclaimer (Disruption Clause):** In the event of an extended disruption of normal classroom activities (due to COVID-19 or other long-term disruptions), the format for this
- course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.
- **Observance of Religious Holidays/Events:** The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department or University. At the discretion of the

instructor, such coursework could be due before or after the examination or assignment. No adverse or prejudicial effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.

- **Sexual Violence Policy:**

Sexual Discrimination Reporting

The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of **sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination** involving members of the campus, **your teacher is required to report** this information to Title IX Student Services or the Office of Equal Opportunity.

Other resources: The resources listed below can offer support but may have to report the incident to others who can help:

For *support services on campus*: **Title IX Student Services: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911**. Or see the OSAVP website for a complete list of services.

NUR - 563 - Evidence-Based Practice for Advanced Nursing Practice

Graduate New Course Proposal Form - 2023/24 AY

General Catalog Information

Graduate New Course Proposal Form

Read before you begin

FILL IN all fields required marked with an *.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

Requested Action: ***Note*: A complete syllabus is required for all new courses.**

Please be sure that all elements required for a syllabus at the University of Maine are present. We recommend you work closely with the syllabus guidelines found at www.umaine.edu/citl.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

Please attach any required files by navigating to the right side menu and clicking "Files".

Graduate course proposals, modifications, or eliminations must be submitted to the Graduate School no later than the 3rd of each month. Please refer to the Graduate School website for the Curriculum Committee meetings schedule as well as instructions on completing this form. [https://umaine.edu/graduate/facultystaff-resources/curriculum-committee/]

Syllabus* ☑ Attached

REASON FOR NEW COURSE* Due to the AACN New Essentials, we are required to revise our masters of nursing graduate curriculum by 2025. We are taking steps to align our curriculum with these new initiatives and objectives.

Department* School of Nursing

New Course: * ☑ New Course ☐ Experimental

EFFECTIVE SEMESTER:

Semester* Summer **Year*** 2024

PROPOSED CATALOG DESCRIPTION:

Course Designator* NUR **Proposed Course #*** 563

Course Type: * Nursing

Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max Length is 30 characters). * EBP for Advanced Nursing Pract

Long Course Title* Evidence-Based Practice for Advanced Nursing Practice

Course Description:* This course focuses on the application of research and evidence-based practice principles to advanced nursing practice. Using these principles, students critically examine inductive and deductive approaches to generating knowledge, appraising, and synthesizing existing literature to design an evidence-based project to solve a clinical problem. Ethical decision-making frameworks and relevant research findings will be used to promote the development of application skills for clinical practice. Logical and epistemological foundations of empirical science will be explored.

Prerequisites: NUR 560

Corequisites: N/A

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Credit Hours: * 2.0

Can this course be repeated for credit? * ○ Yes ◉ No

If YES, total number of credits allowed:	**If YES, total number of completions allowed:**

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.*

☐ Distance Synchronous Learning ☐ Hybrid/Blended ☐ Hyflex ☐ In-Person
☑ Online (Asynchronous)

(For information on Course Components Definitions please see: UMS Data Governance Course Components Definitions)

Course Components (type of course/used by Student Records for MaineStreet)*

☐ Applied Music ☐ Clinical ☐ Field Experience ☐ Independent Study
☐ Laboratory ☑ Lecture ☐ Recitation ☐ Research ☐ Seminar
☐ Simulation ☐ Studio ☐ Thesis ☐ Travel Course

When will this course typically be offered * ☐ Fall ☑ Summer ☐ Spring ☐ Alternating ☐ Variable

Text(s) Planned for Use* N/A

Course Instructor* Kathryn Robinson

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*

☑ Yes
☐ No

Proposed Resources: Does the course addition or modification require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?*

☑ No. The academic unit will not request additional resources for the course ☐ Yes

Units Affected: What other academic units are affected (e.g. course overlap, prerequisites)? Have the affected units been consulted? Any concerns expressed? Please explain.*	N/A
Course Frequency: Does the content of this course overlap significantly with other University courses? If so, list the course, explain the overlap, and justify the need for the proposed course.*	No

University of Maine
School of Nursing
NUR 563 Evidence-Based Practice for Advanced Nursing Practice
Summer 2024

COURSE DESCRIPTION:
This course focuses on the application of research and evidence-based practice principles to advanced nursing practice. Using these principles, students critically examine inductive and deductive approaches to generating knowledge, appraising, and synthesizing existing literature to design an evidence-based project to solve a clinical problem. Ethical decision-making frameworks and relevant research findings will be used to promote the development of application skills for clinical practice. Logical and epistemological foundations of empirical science will be explored.

SEMESTER HOURS: 2 CREDIT HOURS

PRE-REQUISITES: NUR560

COURSE PLACEMENT & PROGRAM: Nursing graduate program

CLASS LOCATION: 100% asynchronous online using UMaine Brightspace platform.

FACULTY:

Name: Kathryn Robinson, PhD, MHA/Ed., RN *(she/her)*
Office hours: Wednesdays from 1:00pm-2:00pm and/or by appointment.
Synchronous Zoom meetings as "check-ins' may be scheduled upon request.
Office phone: 1-207-581-2605 (please leave voicemail)
Email address: Kathryn.robinson1@maine.edu

REQUIRED MATERIALS :

- There is no required textbook for this course.

Supplemental readings required:

- American Nurses Association Code of Ethics for Nurses with Interpretive Statements
- https://www.nursingworld.org/practice-policy/nursing-excellence/ethics/code-of-ethics-for-nurses/coe-view-only/
- Internet access is required to complete assignments for this course. Also, electronic tools that provide word processing (e.g. Microsoft Word, PPT & Excel) and playback of audio are required.
- Additional readings will be posted for each module on Brightspace, via URL link, pdf, or found via literature search for an article on a specific topic.

*Each topic will be supplemented with readings from current professional literature, case studies, and/or publications that will illustrate the main points of the topic being discussed. Please see the course schedule.

Learning Outcomes:
After successful completion of this course, students will be able to:

Course Learning Outcomes	AACN New Essentials Domains	Competencies/ Sub-competencies	Evaluation/ Assessment
Discuss the interrelationship of theory, research and practice and its contribution to advancing the discipline of nursing.	**Knowledge for Nursing Practice**	1.1e, 1.1f 1.2f, 1.2g, 1.2h	• EBP Practice Project • Critique of an Article Paper • Homework Assignments
Incorporate nursing, borrowed and/or educational theories into the development of a proposal for a research or evidence-based practice project	**Person-Centered Care**	2.3h 2.4g 2.5j, 2.5k 2.6h - 2.6j 2.7d, 2.7f 2.9i	• EBP Practice Project • Critique of an Article Paper • Homework Assignments • CITI Training
Examine the role of an advanced nurse in the assessment and planning of protective and predictive factors that influence the health of patients (individuals, families, aggregates, communities, and populations) of selected groups and populations	**Population Health**	3.1j, 3.1l, 3.1m 3.2d, 3.2e, 3.2f 3.3f 3.6g	• EBP Practice Project • Critique of an Article Paper • Homework Assignments
Identify and utilize available resources for conducting research or implementing evidence-based practice Examine principles of evidence-based practice within the context of the professional code of nursing ethics	**Scholarship for Nursing Discipline**	4.1h, 4.1i, 4.1k 4.2h, 4.2j -4.2k 4.3e –4.3i	• EBP Practice Project • Critique of an Article Paper • Homework Assignments • CITI training
Incorporate principles of evidence-based practice into own clinical practice	**Quality and Safety**	5.1j, 5.1m, 5.1o 5.3f	• EBP Practice Project • Critique of an Article Paper • Homework Assignments
Demonstrate interprofessional collaboration to support patient-related needs using shared decision-making	**Interprofessional Partnerships**	6.1f 6.2g, 6.2i 6.4i	• EBP Practice Project • Critique of an Article Paper • Homework Assignments
Examine principles of evidence-based practice within the context of	**Systems-Based Practice**	7.1f, 7.2g, 7.1h 7.2h, 7.2i, 7.2j	• EBP Practice Project

the professional code of nursing ethics Develop a plan for dissemination of research findings to policy makers at the clinical or legislative levels		7.3e	• Critique of an Article Paper • Homework Assignments
Describe how to manage data, information, knowledge, and technology to enhance and measure clinical practice, education, administration, and research.	**Informatics and Healthcare Technologies**	8.2h, 8.2i, 8.2j 8.3h 8.5h, 8.5l	• EBP Practice Project • Critique of an Article Paper • Homework Assignments
Define and examine professional standards in advanced nursing evidence-based practice and research Demonstrate professional standards of moral, ethical, and legal conduct in nursing	**Professionalism**	9.1i 9.2i-9.2j 9.3i, 9.3k, 9.3m, 9.3n, 9.3o 9.4d 9.6e, 9.6h, 9.6i	• EBP Practice Project • Critique of an Article Paper • Homework Assignments • CITI Training
Apply advanced nursing leadership and management principles necessary to safely, reliably and effectively coordinate and carry out patient and family centered care in complex healthcare organizations	**Personal, Professional, and Leadership Development**	10.1c 10.2g 10.3j, 10.3p, 10.3q	• EBP Practice Project • Critique of an Article Paper • Homework Assignments

TEACHING/LEARNING STRATEGIES:

Instructional strategies for the online portion of the course may include discussion, handouts, assigned readings, audio-visual aids, and computer assisted instruction (CAI). All course information is available through the Brightspace learning management system. **The format of the online course is based on self-directed learning. The structure of the course will help provide direction and resources but learners must be proactive and initiate activities that enhance their learning.** It is expected that the learner seeks out resources such as the required textbook(s), accompanying resources, internet materials, journal articles, and additional web sites to individualize student learning.

The course material is presented in modules of varying length. See the course schedule for details about the time periods for the modules and other critical information.

GRADUATE EVALUATION AND GRADING POLICY:

In accordance with the policies of the University of Maine School of Nursing Graduate Program, students must achieve a mean score of 80% on written exams in order to pass the course. Regardless of other grades achieved for written work assignments, an 80% average is required on exams. If the exam grade average is less than 80%, then the student will be awarded a grade no higher than "C" and will not be considered passing.

Students are expected to achieve a grade of B- or higher in all courses.

Grading Procedures

- Evaluation of learning will be determined by performance on homework assignments, participation in discussion forums conversations, and two major papers.
- **Grading Rubrics**: All assignment rubrics available on Brightspace and at the end of this syllabus.
- Evaluation of learning will be determined by performance on homework assignments, individual EBP topic paper, quizzes, and your participation in-class. Please see detailed syllabus for due dates and assignments below.

Grading Criteria
School of Nursing participates in the +/- grading system. Individual faculty may choose to award a plus (+) or a minus (-) grade in nursing courses.

The following criteria have been adopted for plus and minus grades:
A = 92% - 100% ; A-= 90-91% ; B+= 88-89% B= 82-87 % ; B- = 80% - 81% C+ = 78% - 79%; C= 77 ; C--= 70-76 ; D = 60% - 69%; F = below 60%

- Grades are assigned as whole numbers are not rounded up. This applies to individual quiz and exam scores, course assignments, and final course grades.
- *A cumulative grade of **80%** (B-) must be achieved to pass this course.
- A grade of "I" (incomplete) will only be used for extreme circumstances and documentation will be required. The student will have a mandatory meeting with faculty to document a plan to clear the "I" grade per UMaine and SON policy. The student cannot progress to a subsequent course with an "I" in a prerequisite or professional course.

Late Assignment and make-up policy
All assignments are mandatory and must be completed by the scheduled due dates. Failure to do so will result in a "0" for the assignment. There is no extra credit for assignments.

- Faculty may offer extensions for assignments with evidence of extenuating circumstances only if **requested in advance of the assignment deadline.**
- "Technical issues" are not valid excuses for late work unless the problem stems from UMaine servers. In lieu of any issues, email the assignment to faculty, prior to the assignment due date/time.
- Student's missing any assignment deadline must notify the instructor at least 24hrs before to be approved for the make-up period. Make-up's will only be given for substantial and confirmed reasons.
- Lack of timely notification may result in a zero on assignments at faculty discretion.

Instructional Week: The instructional week runs from Monday at 12:01am through Sunday, at 11:59pm unless otherwise specified on course schedule.

Evaluation Criteria

Activity	Percentage of Grade
A. Participation • Review of each module's content in full	**5%**
B. Individual Discussion Posts & Peer Responses • # 1: Research Question and significance of topic • # 2: Addressing health inequities through research & promoting engagement • # 3: Critique of an Article Discussion • # 4: Funding & Grant Mechanism related to your topic	**40%**
C. CITI Training	**10%**
D. Critique of an Article Assignment • Choose (1) peer-reviewed article related to your topic and fill out critique of an article worksheet	**10%**
E. Evidence-Based Practice Project (35%) The following sections below will progressively work towards an evidence-based final paper and PPT presentation. I will provide graded feedback at the half way point that will consist of your PICOT question, significance, and literature review. The expectation is to incorporate edits into your final paper submission.	
• Part A → PICO(T) Question & Significant of EBP Clinical topic	**10%**
• Part B → Methods & Synthesis (review of the literature) section **Parts A-C will be reviewed for overall feedback from instructor to ensure students are on the right track (non-grading)*	**10%**
• Part C → Design & Implementation Plan. - Design (i.e. setting, sample, inclusion/exclusion criteria, design, measurement tools if applicable, data analysis/ statistics) - Implementation plan (i.e. procedure, explanation of app) - Creating an App steps and how to use - Conclusion	**10%**
F. PPT Presentation • Create a PPT from your EBP topic paper to share with your peers	**5%**
	Total: 100%

Class Participation (5%):
What I want you to do: Respectfully engage in the learning community.

Why I want you to do it: Learning is more than reading a textbook or watching a lecture. To really "get" this material and start thinking and acting like a nurse using evidence-based practice as a tool, we need to work through scenarios in our class meetings (even if it's asynchronous), share our varied experiences and worldviews, and ask questions of one another.

How I want you to do it: Watch all recorded lecture and online assigned videos in full. Use the assigned readings to solidify what you are hearing and seeing in the videos. Participate in all assignments and contribute to discussions regarding each module's

content. If there are ongoing barriers to you participating and engaging with the course, please reach out to course faculty early to develop a plan.

How I will evaluate you: Each module contains at least one recorded video. At least 75% of each module's materials need to be opened, reviewed, and when appropriate, watched in full. This will count as 1pt per module A and 1pt per module B. If it is below 75% for the module, it will be 0pts. There are a total of 6 Modules (part A + part B) for a total of 12 points. This will be calculated at the end of the course and imported into one gradebook column as part of the participation grade.

Discussion Forum (40%):
What I want you to do: The discussion board format is designed to provide a forum for online education and communication between students and faculty. Each discussion post will be due the night before the new week begins, 11:59pm EST. ***There will be no late credit given unless discussed PRIOR to the deadline with me.*** Please refer to course schedule (at the end) for due dates and which weeks have peer responses. There are a total of 4 discussion posts.

- Each student is required to respond to (1) other classmate's post *(this is called a "peer response")* with a minimum of one APA reference appropriately cited in APA 7th edition format. There are a total of 4 peer responses. Check Brightspace for details.

  Discussion Post #1: PICOT Question & Significant of Topic Discussion
  Review the content in the module 1 materials, specifically the PICOT ppt. After reviewing this ppt, you will create your own PICOT question. PICOT is the first step in the scientific process. Creating a research question is the building block to the rest of any evidence-based project. You will upload your PICOT question and significance of the topic to the discussion board and complete a peer response.

  Discussion Post #2: Addressing health inequities through research & promoting Engagement. The Evidence-Based Practice project will be rooted in the National Institute of Nursing Research 2022-2026 Strategic Plan. You are to pick one research lens to center your project around from the list of six research lens and explain how your EBP project and that specific research lens is aligned. The NINR strategic plan outlines the Institute's vision for supporting science that advances our mission: to lead nursing research to solve pressing health challenges and inform practice and policy-optimizing health and advancing health equity into the future. You can find the link to this Strategic Plan here. Upload your summary of its alignment in the appropriate discussion board and complete a peer response.

  Discussion Post #3: Critique of an Article Discussion
  You will be provided (4) research-based articles to choose one to read and critique its strengths and weaknesses. Each article is written by a nurse researcher centered around an evidence-based practice topic. These articles provide a great practice on breaking apart topics in research to learn the scientific process as well as identifying bad/good science. You will have one week to choose one of these four articles to read and complete the discussion post, and complete a peer response

Discussion Post #4: Funding & Grant Mechanism Related to Your Topic.
Grants provide money, equipment, or both to eligible researchers to carry out approved projects or activities. A grant is a way the government funds your ideas and projects to provide public services and stimulate the economy. Grants support critical recovery initiatives, innovative research, and many other programs. Write a detailed summary on one credible funding mechanism that could fund your proposed EBP project and upload to the appropriate discussion forum and complete a peer response. In addition, please include one peer-reviewed journal that findings from your EBP project could be published. Please review detailed directions on Brightspace.

Why I want you to do it: The majority of healthcare-related EBP projects require some type of funding. In order to implement a study, money is often needed. For practice change to occur, dissemination is a vital component to research and is also tied to money. To publish findings in peer-reviewed journals, a publication fee is usually required.

How I want you to do it: In this forum, the students present responses to discussion in question(s) that are posted by the course faculty. You are expected to type your responses in complete, clear, and concise sentences. You are expected to follow the rules of grammar, usage, spelling, and punctuation. You are expected to demonstrate comprehension and application of the weekly reading assignments in each of your responses, and this should be completed *independently* of your classmates. You are expected to **include a peer reviewed source or course materials in <u>all</u> discussion responses**, include APA citations and references. See module for discussion questions and grading rubrics.

- Substantial individual post(s) must be made between day 1 (Monday) and day 7 (Sunday)
- Late individual submissions of individual discussions posts are graded per discretion of course faculty.
- Late peer discussion responses will automatically receive a grade of zero (0) as it is illogical to enter the Discussion Board after the discussion has ended.
- Omitting APA citations (7th edition) for posts will receive a deduction in points. Please see rubric.

Meaning of *Substantial*

For this class, substantive means that your message contains supporting arguments and helps to further the discussion of course content. Substantive messages often include contributions of additional ideas and sources, insights or questions about classmates' comments, connections to the course readings, and ways of applying the content from the course.

Full participation in the discussion is a key component of the learning experience. It enriches group interaction and enhances the learning environment. To be considered substantive, a participation post (the initial and the on- going) should:

- Average 300 - 400 words in length.

The post should include appropriate foundation knowledge, be factual, enhance the ongoing dialogue, and include support from scholarly literature. It is for this reason that a

majority of a learners' substantive participant posts should include at least one citation. Rather than just reporting what someone else has stated, the student learner should demonstrate application and/or reflection of knowledge

These are written responses based on assigned readings and should be a paragraph in length. The questions will require the student to reflect on prior knowledge (from previous course work) and also personal experiences and readings in course syllabus.

How I will evaluate you: Each discussion board post and peer response will be worth a 100pts for that week. You will be graded using the following rubric:

Discussion Post Rubric (out of 100pts)

	Satisfactory (80-100pts)	**Needs Improvement (60-79pts)**	**Unsatisfactory (0-59pt)**
Criterion 1: (40%) Quality of Posting	The entry is focused and coherently integrates examples with explanations or analysis. This entry includes references to the assigned course material. The entry also contains references to information from outside sources that pertain to the topic at hand. The entry demonstrates awareness of its limitations or implications and considers multiple perspectives when appropriate. All positions or insights are fully developed and supported. There is evidence of in-depth engagement with the topic.	The entry is primarily descriptive or summative and lacks consideration of alternative perspectives; few connections are made between concepts and ideas. This entry includes references to the assigned course material. There is a passing engagement with the topic	The entry consists of disconnected thoughts and does not include references to the assigned course material. There is no reflection in the posting.
Criterion 2: (40%) Engagement with Peers	The student successfully engaged peers in his or her original posting. The student posted the required response to a peer, and the response was insightful and thoughtful. The student's peer responses offered significant new information or a different perspective. This student may have also answered any questions that peers may have posted and posed questions for peers in their original post.	The student may have unsuccessfully attempted to engage peers in his or her original posting. Minimum required response was posted to a peer with little thought or insight. The content in the response post lacked substance. The student's peer responses did not offer new information or provide a different perspective.	The student did not respond to any peer postings or engage peers in his or her original posting. No peer responses were posted.

Criterion 3: (20%) Grammar/writing, APA	The entry follows grammatical rules, there are no spelling errors, and citations are correct, appropriately used 7th edition APA	The entry follows grammatical rules, but has spelling errors, and/or citations are incorrect.	The entry does not follow grammatical rules, spelling errors, or citations are missing.

CITI Training (10%)
What I want you to do: The Collaborative Institutional Training Initiative (CITI Program) is dedicated to serving the training needs of colleges and universities, healthcare institutions, technology and research organizations, and governmental agencies, as they foster integrity and professional advancement of their learners.

Why I want you to do it: As a graduate nursing student in an evidence-based research course, completion of one CITI program module will enhance your understanding and training in research related ethics, regulatory oversight, and administration of research projects.

How I want you to do it: Log into this website and follow the detailed instructions in the Brightspace module: https://about.citiprogram.org/

How I will evaluate you: Completion of the assigned CITI module with a 85% or above by the due date will result in a 100%. Any grade below 85% or not completed within the timeframe (without prior communication) will receive a 0% for the assignment. CITI allows you to retake the modules as many times as you like, and provides a score at the end.

Individual Critique of an Article Assignment (10%)
What I want you to do: You will choose (1) peer-reviewed, empirical **quantitative** article that aligns with your EBP topic. A list of topics is provided to help narrow it down. Fill out the *Critique of an Article* worksheet found in the module associated with this assignment.

- To determine if your article is a good fit, the following sections need to be included: Introduction, methods, results, discussion, conclusion. The methods should include data, measurement tools, scale, and statistics.

Why I want you to do it: The purpose of this assignment is to *critique* (pros/cons, good/bad) of the research study using what you learn in class as "good" or "bad" science. An empirical study article is a research study that is based on observation and measurement of phenomena, as directly experienced by the researcher. The data thus gathered may be compared against a theory or hypothesis, but the results are still based on *real life* experience.

How I want you to do it: Go to the Fogler library website and use any of the following databases to search: CINAHL, PsychINFO, EBSCOHOT, PubMed etc. to find (1) peer reviewed article. Make sure to take notes on the key words you used to search (my suggestion is to use * at the end of the word so it searches all possibilities. Example: Dispari* →disparity, disparities) .

- The article you choose should be within the last 7 years of publication from this year's date. If it's more than 7 years, please email your instructor for approval.
- Some references published in countries other than the United States are acceptable, but you need to consider differences in health care and if the findings might be similar or

different if the study were conducted in this country.
- Use a 12-point easy to read font such as Times New Roman. Leave a 1" margin all around the paper. Follow APA 7th edition.

How I will evaluate you: At the designated due date, you each will upload your "Critique of an Article" worksheet ***and*** the article used to the assignments tab. This part is worth 10% and will be evaluated using a rubric.

Below is a list of topics to help guide you if needed:

List of Topics			
Labor & Delivery	Cardiovascular	Nurse Burnout	Alternative therapies
Pre-natal care	Compliance	Effects of Diet	Animal – Assisted Therapy
Ectopic Pregnancy	Cancer	Diabetes	NSAIDS
Narcotics	PTSD	STI's	Chronic Injuries
Hospital-acquired infections	Birth defects	Genetics/ Genomics	Mental Health
Toxicology/Poisoning	Substance Abuse	Rehabilitation	Ageing
Patient Safety	Diagnostic Testing	Bioethics	Deafness and hearing loss
Vaccinations/ Immunizations	In Vitro Fertilization	Breast feeding	Oral Health
Palliative Care	Sexual Health	Urban Health	Water, Sanitation, Hygiene
Sleep difficulties	Anxiety/Stress	Asthma	Death & Dying
Eating disorders	Exercise	Endocrine disorders	Injury & Violence
Social determinants of health	Climate Change	Health Informatics	Racial Inequality/disparities
Social Justice	COVID-19		

Evidence-Based Practice (EBP) Project (35%)

What I want you to do: Each student is to choose a topic from the list above (under the critique of an article section), and ensure that the topic aligns with one of the NINR Strategic Plan 2022-2026 research lens. Once a topic is chosen, narrow this down to a very specific topic for which you feel you could create an evidence-based practice project (starting with your PICOT question). (*Note: This is hypothetical, we will not be implementing an actual project/study at this time but the project should be based on real-life).*

Why I want you to do it: EBP incorporates scientific evidence and proven medical practices to create the most effective healthcare strategies. This can help improve the overall care each patient receives, and in turn, the outcome. This project is your first experience in taking an issue you see in healthcare and creating an evidence-based solution. With this practice, you will increase your confidence and ability to develop and perform similar EBP projects and solutions in your nursing career.

How I want you to do it: This section is broken up into 3 sections (PICOT & Significance, Methods & Synthesis, and Design & Implementation).

- **PICO(T) Question & Significance to EBP Clinical Topic (10%):**
  - *PICOT:* This is the first step in implementing EBP. The format for asking a EBP question is called a PICOT question, and you will develop this question based on an interest you have within the field of nursing. Use the materials provided in class to develop your PICO(T) question related to your chosen clinical EBP clinical topic.
  - *Significance:* The significance section lets the reader know the importance of the problem that you will solve. Through data obtained in reports and professional websites such as the American Hospital Association, American Heart Association, American Association of Colleges of Nursing, or the American Diabetic Association, you can gather these statistics. Your sources for this data will (most probably) not be the same as your articles chosen to support your PICO(T). At least three references are needed for this section. See Brightspace for exemplars.
- **Methods & Review of the literature Section (10%):**
  - *Methods:* This section should describe how you examined the literature for articles that will help answer your PICO(T) question. Your methods will include the databases, search words, and inclusion and exclusion criteria.
  - *Synthesis:* Your literature review should be based on *~5-6* evidence-based articles that support your PICO(T) question. These research articles will be different than the chosen sources for your significance section. This synthesis will require that you read your articles and ***summarize*** what the overall evidence conveys to you (as the reader). With a synthesis, the author (i.e., you) should not be describing the results from each article. Instead, you will summarize the findings and weave your interpretation into the findings. You may need to discuss the articles under themes. We will discuss the statistical analysis throughout this course and please let me address any questions that you may have about the articles (statistics). See Brightspace for exemplars.
- **Design & Implementation Plan (10%):** This section will discuss how you plan to implement your study into your designated population. You've already developed the question and gap in science, now you will be introducing the issue as an intervention to solve the problem you are addressing. This section will include design, sample, setting, procedure, statistics, related policies etc.

How I will evaluate you: The grading rubric for this section is located on the last few pages of this syllabus and in Brightspace

EBP Project → PPT Presentation (15%)

What I want you to do: You are developing a PPT presentation directly from the sections within your project. Refer to the template below and exemplars in Brightspace for guidance.

Why I want you to do it: The art of debriefing and sharing our health-based solutions can lead to the creation of new and/or improved ideas to further advance the science. EBP can empower nurses and other clinicians by helping establish effective treatment and patient care practices.

Reviewing each other's PPT presentations in a shared, safe place leads to exploration, knowledge development, skill attainment, and furthering ideas on patient safety and quality of care.

How I want you to do it: Review the exemplar PPTs in Brightspace to develop your own PPT using those as a guide/template. After making your PPT, use zoom and/or Kaltura to record presenting your video as if you are presenting it live in-person. Your video should be no longer than 15 minutes. Please include notes and as much information as possible on the slides (that isn't too crowded) for those that are visual, not just auditory learners. Upload your completed PPT and recording to the discussion forum labeled "PPT Presentations." Please include a subject heading and 1-2 sentences outlining your topic.

How I will evaluate you: There are no set number of PPT slides, but you will want to focus on what is the most important pieces to cover within your timeframe. Refer to the rubric at the end of this syllabus and in Brightspace for specific details on grading.
PPT Presentation Template:

- Title slide: name, title of presentation, Date, class (refer to APA 7th edition for PPT formatting)
- A slide that gives an introduction (should be bulleted) that gives the *significance* and the *gap* you are addressing.
- A slide that contains your PICOT question and your hypothesis
- A slide on methods
- A slide or two on your review of the literature: what were the *major* results or themes...again, you are presenting, so you are painting the picture of what is to be done.
    - It is critical to show <u>how</u> your articles are related in order to develop the themes
- A slide on design
- A slide on sample, setting, inclusion/exclusion, people/resources involved
- A slide on <u>*procedure.*</u> The biggest part will be to clearly explain to the class what is the plan for implementing the project.
- A slide outlining how you plan to use the results (statistics/analysis)
        - This should include a bullet on descriptive <u>and</u> a bullet on inferential statistics
- A reference slide in APA 7th edition

LEARNING RESOURCES:

- **Course Infrastructure & Access:** This class will be taught through the Blackboard system. Every effort will be made to make these accessible to those with dial-up connections. A list of University of Maine System sites with free computer access will be provided on request. Written paper assignments and case studies will be completed and submitted to the appropriate link found in each week's assignment. Discussion Board assignments will be completed and submitted directly to the appropriate discussion board. Assignment grades will be posted under "My Grades."

- **Computer Literacy Requirements:** Basic computer skills are required. Students will require reliable access to a computer, know how to turn the computer on and reboot when necessary. They will know how to use the Internet and how to access Blackboard. They will know how to send and retrieve e-mail messages and send attachments via e-mail. Course information will be transmitted using the Blackboard course site.

- **Hardware, Software and Bandwidth Requirements:** You will need reliable access to a reasonably fast computer (i.e. one purchased or upgraded within the last 2 – 3 years), software programs that provide access to the Internet and Blackboard, and an Internet connection at 300K broadband speed or higher allowing you to view the video streaming podcasts.

- **Technical Support: Help Line 1-877-947-4357 or 207-581-4591**
  Hours: Monday-Thursday 8 AM-7PM; Friday 8AM- 5PM
  Weekends: Please email to cedtechhelp@umit.maine.edu

- **Importance of Time Management:** Unlike courses that meet in an on-campus lecture hall or laboratory, this on-line course offers you flexibility on the time of day and day of the week that you complete assignments and respond to discussion board topics. For these reasons, good time management skills are particularly important for an on-line course.

- **The Writing Center-** This program is a free service available to all University of Maine students. Tutors can work with you individually to assist with the writing process, grammar, and APA or other styles. The Writing Center is located at 402 Neville Hall, phone (207) 581-3828.

- **Peer Mentor Program**- the Orono Student Nurses' Association offers a peer mentor program. Volunteer students from the junior and senior class can assist newer students with time management, the role of student nurse, use of APA format and success in clinical sites and the classroom. Please consider accessing this program. More information can be found on the ONSA Facebook group.

- Students should look at the many programs available online, organized by the Purdue University Online Writing Lab, also known as the Purdue Owl. A link to this site follows: https://owl.english.purdue.edu. The Purdue Owl also has their own You Tube videos, with brief descriptions of the mechanics of the APA style.

Academic honesty:
Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student

Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University.

Student Accessibility Services statement:
If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, 121 East Annex, 581.2319, as early as possible in the term. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with me (Professor Robinson) privately as soon as possible.

Sexual violence policy:
Sexual discrimination reporting: The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell any of your teachers about sexual discrimination involving members of the campus, **your teacher is required to report** this information to the campus Office of Sexual Assault & Violence Prevention or the Office of Equal Opportunity.

Behaviors that can be "sexual discrimination" include sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct, and gender discrimination. Therefore, all of these behaviors must be reported.

The University of Maine's non-sexist language policy may be viewed at:
http://www.umaine.edu/WIC/both/language.htm.

Why do teachers have to report sexual discrimination?
The university can better support students in trouble if we know about what is happening. Reporting also helps us to identify patterns that might arise– for example, if more than one victim reports having been assaulted or harassed by the same individual.

What will happen to a student if a teacher reports?
An employee from the Office of Sexual Assault & Violence Prevention or the Office of Equal Opportunity will reach out to you and offer support, resources, and information. You will be invited to meet with the employee to discuss the situation and the various options available to you.

If you have requested confidentiality, the University will weigh your request that no action be taken against the institution's obligation to provide a safe, nondiscriminatory environment for all students. If the University determines that it can maintain confidentiality, you must understand that the institution's ability to meaningfully investigate the incident and pursue disciplinary action, if warranted, may be limited. There are times when the University may not be able to honor a request for confidentiality because doing so would pose a risk to its ability to provide a safe, nondiscriminatory environment for everyone. If the University determines that it cannot maintain confidentiality, the University will advise you, prior to starting an investigation and, to the extent possible, will share information only with those responsible for handling the institution's response.

The University is committed to the well-being of all students and will take steps to protect all involved from retaliation or harm.

If you want to talk in confidence to someone about an experience of sexual discrimination, please contact these resources:

> For *confidential resources on campus*: **Counseling Center: 207-581-1392** or **Cutler Health Center: at 207-581-4000**.
> For *confidential resources off campus*: **Rape Response Services:** 1-800-310-0000 or **Spruce Run**: 1-800-863-9909.

Other resources: The resources listed below can offer support but may have to report the incident to others who can help:

> For *support services on campus*: **Office of Sexual Assault & Violence Prevention: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911**. Or see the OSAVP website for a complete list of services at http://www.umaine.edu/osavp/

DEI Statement

The UMaine School of Nursing community views students' individual identities and values as a strength. Those identities consist of (but are not limited to) many traits and beliefs, such as gender and gender identity/expression, sexual orientation, race, ethnicity and national identity, political affiliation, age, intellectual and physical ability, socio-economic class, faith and non-faith perspectives, military experience, and other characteristics. We aim to create an atmosphere where all students can learn about, from, and with each other in an equitable, collaborative environment that will encourage mutual respect and courtesy from all diverse backgrounds. A culture of belonging for all includes treating your instructor and all other participants with civility. As members of this community, the SON will provide an open, safe atmosphere for constructive dialogue based on facts of differing perspectives that must be free from harassing statements. If you have an experience that contradicts this commitment to your learning or an issue arises with other individual(s) during the semester, please contact the instructor and/or course coordinator directly, either in-person or via email.

Observance of Religious Holidays/Events

The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department or University. At the discretion of the instructor, such coursework could be due before or after the examination or assignment. No adverse or prejudicial effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.

A member of any religious group may, without penalty, absent themselves from class, clinical or lab as required in compliance with their religious obligations. Given the diverse religious faiths represented at the University of Maine School of Nursing and acknowledging the nonsectarian nature of the School of Nursing, this policy is intended to apply equitably to all religious groups and to provide opportunities for individuals to meet their religious obligations.

- The student who anticipates the need to be absent to accommodate his or her religious practice **must** notify faculty in advance of such anticipated absence. This notice should be provided at least one week in advance.

- Exams, assignments are required to be completed prior to the class/clinical/lab date. Clinical and lab make up shall be in compliance with the expectations as stated in each Clinical and Lab syllabus.

- No adverse or prejudicial effect shall result to any student who avails him/herself of the above policy.

For UMaine information regarding religious holidays and events as well as other important dates, please see the link:
https://umaine.edu/citl/teaching-resources-2/required-syllabus-information/

Course schedule disclaimer (disruption clause):

In the event of an extended disruption of normal classroom activities, the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

NUR563 Course Outline

Week	Topics	Required Readings, Activities, Assignments & Due Date
Introductory Module		• Review syllabus in Brightspace • Introduction – Please provide your bio in the discussion form.
MODULE 1 **5/6/2024**	*REVIEW of the basics* Topics 1. Relationship of Research and Evidence-Based Practice (EBP) 2. PICOT introduction & questions 3. Levels of Evidence	Content to Cover in Materials • Review content in full; overview of EBP, levels of evidence, and PICOT questions • Review all PPTs and worksheets • Participation is graded based on full completion of watching videos (including PPTs). Homework Assignments • Begin to search for one (1) peer-reviewed empirical article and begin dissecting it for 'critique of an article' assignment • Work on PICOT and significance section • Read the article by Melnyk, B. M. & Fineout-Overholt, E. (2012). Making the case for evidence-based practice and cultivating a spirit of inquiry. In B.M. Melnyk & E. Fineout-Overholt (Eds.). Evidence-based practice in nursing and healthcare: A guide to best practice (2nd ed). Philadelphia: Lippincott, Williams & Wilkin, pp. 3-24. • Read the article by Fineout-Overholt, E., & Stillwell, S. B. (2012). Asking compelling clinical questions. In B.M. Melnyk & E. Fineout-Overholt (Eds.). Evidence-based practice in nursing and healthcare: A guide to best practice (2nd ed). Philadelphia: Lippincott, Williams & Wilkin, pp. 25-39.
MODULE 2 **5/13/2024**	*Topics* Introduction to Variables & Hypotheses How does Research Begin? • Hypotheses • Variables • Significance Ethical Conduct of Research	Content to Cover in Materials • Review content in full including all PPTs and worksheets • Participation is graded based on full completion of watching videos (including PPTs). Homework Assignments • **Discussion #1: Upload *PICO(T) question & Significance for EBP* project to discussion forum and complete peer response.** • Read the article by Lipowski, E.E. (2008). Developing great research questions. *American Journal of Health Systems Pharmacy, 65*, 1667-16704. • Read Steinbrook, R. (2002). Protecting research subjects-the crisis at Johns Hopkins. *New England Journal of Medicine, 346*, 716-720, and review the instructor notes. Use these notes to review how to 'break apart' research articles.
MODULE 3 **5/20/2024**	*Topics* Critiquing and Planning Quantitative Studies	Content to Cover in Materials • Review content in full including all PPTs and worksheets • Participation is graded based on full completion of watching videos (including PPTs).

Week	Topics	Required Readings, Activities, Assignments & Due Date
		Homework Assignments • **Discussion #2: Upload *Addressing health inequities through research & promoting engagement* to discussion forum and peer response.** • Read the following article by Kalinowski, B. & Fidler, F. (2010). Interpreting significance: the differences between statistical significance, effect size, and practice importance. *Newborn & Infant Nursing Reviews, 10*(1), 50-54. • Read the following article by Fethney, J. (2010). Statistical and clinical significance, and how to use confidence intervals to help interpret both. *Australian Critical Care,* 23, 93-97. doi:10.1016/j.aucc.2010.03.001
MODULE 4 **5/27/2024**	*Topics* Locating and Evaluating Sources of Evidence Use of secondary data in research Systematic reviews of literature Meta-analyses Meta-syntheses	Content to Cover in Materials • Review content in full including all PPTs and worksheets • Participation is graded based on full completion of watching videos (including PPTs). Homework Assignments • **Discussion #3: Upload *Critique of an Article Discussion* to discussion forum and peer response.** • **Submit Methods and Synthesis to Assignments tab in Brightspace for review.** • Read the following article by Freeman, M.D. (2010). Clinical practice guidelines versus systematic reviews; Which serve as the best basis for evidence-based spine medicine? The Spine Journal 10, 512–513. doi:10.1016/j.spinee.2010.04.006 • Read the following article by Nannini, A., & Houde, S.C. (2010). Translating evidence from systematic reviews for policy makers. Journal of Gerontological Nursing, 36, 22-26. doi:10.3928/00989134-20100504-02 • Read the following article by Fineout-Overhot, E., Beryman, D. R., Hofstetter, S., & Sollenberger, J. (2012). Finding relevant evidence to answer clinical questions. In B.M. Melnyk & E. Fineout-Overholt (Eds.). Evidence-based practice in nursing and healthcare: A guide to best practice (2nd ed). Philadelphia: Lippincott, Williams & Wilkin, pp. 40-70. • Read the following article by Cohen, B., Vawdrey, D.K., Liu, J., Caplan, D., Furuya, Y., Mis, F.W.M., Larson, E.. (2015). Challenges associated with using large datasets for quality assessment and research in clinical settings. *Policy, Politics, & Nursing Practice, 16*(3-4), 117-124. DOI: 10.1177/1527154415603358
MODULE 5 **6/3/2024**	*Topics* Critiquing and Planning Qualitative Studies	Content to Cover in Materials o Review content in full including all PPTs and worksheets o Participation is graded based on full completion of watching videos (including PPTs). Individual Homework o **Submit Design & Implementation Plan to Assignments tab in Brightspace.** o **Submit Critique of an Article Worksheet under Assignments in Brightspace** o Read the following article by Beck, C. T. (2009). Critiquing Qualitative Research. *AORN, 90*(4), 543-554.

Week	Topics	Required Readings, Activities, Assignments & Due Date
		○ Read the following article by Grace, J. (2011). Qualitative research: using "soft" evidence to solve hard clinical problems. *AACN Advanced Critical Care, 22(*1), 89-92.
MODULE 6 **6/10/2024**	*Topics* Clinical practice guidelines Dissemination of research findings	Content to Cover in Materials • Review content in full including all PPTs and worksheets • Participation is graded based on full completion of watching videos (including PPTs). <u>Individual Homework</u> • **Discussion #4: *Upload Funding & Grant Mechanism related to your topic* to discussion forum and peer response.** • **PPT Presentation due to discussion forum. Respond to one other classmate's post.** • Read the following article by Grinspun, D., Melnyk, B. M., & Fineout-Overholt, E. (2012). Advancing optimal care with clinical practice guidelines. In B.M. Melnyk, & E. Fineout-Overholt (Eds.). Evidence-based practice in nursing and healthcare (2nd ed.). Philadelphia: Lippincott, Williams & Wilkins, pp. 186-204.

Critique of An Article Worksheet
NUR563

Your Name:_____

What is the topic of the article (be specific):

Introduction (20pts; 5pts each bullet)

- Identify the problem statement
- Does the article have a hypothesis? If so write it out. If not, develop your best guess for their hypothesis. Make sure to clearly identify what are their independent and dependent variable(s).
- Describe the empirical study's aims and/or objectives
- What is the overall significance they are trying to accomplish (in your own words).

Design & Methods (20pts)

- Explain their use of intervention and method for evaluation.

Critique of the Article (20pts)

- Discussed a minimum of 3-5 weaknesses in the study
- Explain a minimum of 2-3 strengths of the study

Related Article to Ethics (20pts)

- Explain the role of ethics in this study, and its significance to the outcome. (If ethics is not explicitly clear, could discuss their use of informed consent, IRB approval, equitable care to sampling etc.)

Compared Article to Implications and/or Translation to Nursing Practice (20pts)

- Relate this study's topic to one area within evidence-based nursing practice.

Total points: _____/ 100pts

NUR563 – PPT Presentation on EBP Paper (10%)

Names: _____ **Date:** _____

Directions: Using about 10-12 slides, present within 15 minutes

- **Introduction and Significance of a clinical problem** (_____/5 points)
  - States overall issue using evidence-based information
  - Outlines broad/key statistics related to topic
  - What is the importance of the problem that you will solve?
  - Hypothesis is clearly explained and consistent with background/significance section
  - Purpose problem/statement is clearly explained

- **Statement of a PICO (T) question** (_____/5 points)
  - P= population/problem; what group of patients are you interested in?
  - I= intervention; what change in practice would you like to try?
  - C= comparison; what is current procedure/practice? (You may not always have a comparison)
  - O= outcome; what outcome do you hope to achieve?
  - T= timeline for implementation (if applicable)

- **Review of the literature** (_____/10 points)
  - Methods section outlines search databases used and inclusion/exclusion criteria
  - From chosen research articles, **summarize** your key themes from
  - Explanation demonstrates clear understanding of the relationships between and across themes
  - Explanation of **gap(s)** generated from synthesis of literature.
  - Explanation of how gap relates back to PICOT and leads into design and implementation plan.

- **Design** (_____/10 points)
  - Design is consistent with PICOT and hypothesis statement
  - Setting & sample population fully described
  - Outlines plan/procedure; data collection; what surveys are to be used (if applicable)
  - Mentions descriptive and/or inferential statistics; matches design
  - Explains function and use of application

- **Technology Component** (_____/10 points)
  - Explanation of how the technology will be incorporated
  - Provides some sort of visual and/or step my step instruction

- **Implementation Plan** (_____/10 points)
  - Clear explanation of procedural steps
  - What supports are needed to carry out study?
  - What resources might be needed (people, supplies, etc.)
  - Letter of Support and/or Informed consent explained

- Procedural steps consistent with design

- **Miscellaneous**
  - Summary/Conclusion statement (_____/5 points)
  - PPT looks professional, use of tables, smart Art, visuals, colors etc. (_____/5 points)
  - APA following 7th edition throughout; formatting/references (_____/5 points)
  - Met deadline, doesn't exceed 15 minutes, all materials provided (_____/10 points)

Total = _____ / __Pts

NUR563- Healthcare Research Paper Rubric
Design & Implementation Rubric

TOTAL: ____/ __40pts____ = _____%__
**written in the order you are to write this section in

Criteria	4-Exceptional	3-Proficient	2-Satisfactory	1-Insufficient	0- Unsatisfactory
Appropriateness of Accreditation/ Standard/ Core Measure that's EBP (10%) __/4	States an evidence-based accreditation and/or core measure and/or standard that aligns with PICO		Standard/core measure mentioned but not aligned with PICO		Did not state a standard/ core measure/ or accreditation for their topic.
Type of Study Design (10%) __/4	Mentions whether it is quant or qual and uses at least 2 more identifying research terms to clearly identify study design	States study design but does not adequately label or name it	Mentions a vague study design	Study design is incorrect	Does not state study design
Setting (10%) __/4	Clearly and concisely states where this proposed study will take place and who is involved	Vaguely states a geographic and/or key people/organizations involved	Missing key information to clearly understand setting of proposed study		Did not state a setting
Sample Criteria (10%) __/4	Clearly identifies total sample (in each group if more than one), explains key identifiers	Identifies sample characteristics but missing 1-2 key pieces	Identifies sample characteristics but missing multiple key pieces	Broadly states a sample but most of information is missing	Did not state a sample
Inclusion/ Exclusion (10%) __/4	Clearly identifies inclusion AND exclusion criteria for proposed study. In-depth, makes sense	Identifies inclusion /exclusion, some key pieces missing	Vaguely identifies inclusion and/or exclusion, missing multiple pieces	A broad attempt but too much information missing to understand key criteria	Did not state inclusion and/or exclusion criteria for proposed study
Procedure (including surveys, tables, demographics etc) (20%) __/4	Procedure is clearly outlined: including methods, tables, demographics, survey tools, necessary information to understand proposed study	States procedure but missing 1-2 items to clearly understand proposed study	Identifies a few pieces of procedure, but missing key information and/or confusing, information misplaced	Poorly described procedure, many pieces of information missing, need work, incorrect information	Did not state a procedure. Left out key pieces of information outlined in guidelines and syllabus

Criteria	4-Exceptional	3-Proficient	2-Satisfactory	1-Insufficient	0- Unsatisfactory
Explanation of statistics / data analysis planned (10%) __/4	Explanation of what you will do with the results. Mentions (1) descriptive and (1) inferential statistic to be used. Mentions use of p value.	Explains what will be done with results but a little confusing, missing either (1) descriptive or (1) inferential		Missing key pieces of information to understand proposed data analysis. Vaguely or broadly attempts this section, needs work.	Did not state proposed data analysis and/or statistics to be used for results.
Conclusion (10%) __/4	A well formulated paragraph that ties it all back together. Free of grammar errors.	A broadly or vaguely written paragraph; several grammar errors but doesn't distract the reader.	A broadly or vaguely written paragraph; several grammar errors that distracts the reader from comprehensive. Doesn't relate back to PICO or hypothesis.	Poorly written conclusion; too broad/vague attempt, doesn't relate back to PICO and hypothesis.	Does not provide a conclusion statement

NUR - 566 - Innovations in Teaching and Learning

Graduate New Course Proposal Form - 2023/24 AY

General Catalog Information

Graduate New Course Proposal Form

Read before you begin

FILL IN all fields required marked with an *.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

Requested Action: ***Note*: A complete syllabus is required for all new courses.**

Please be sure that all elements required for a syllabus at the University of Maine are present. We recommend you work closely with the syllabus guidelines found at www.umaine.edu/citl.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

Please attach any required files by navigating to the right side menu and clicking "Files".

Graduate course proposals, modifications, or eliminations must be submitted to the Graduate School no later than the 3rd of each month. Please refer to the Graduate School website for the Curriculum Committee meetings schedule as well as instructions on completing this form. [https://umaine.edu/graduate/facultystaff-resources/curriculum-committee/]

Syllabus* ☑ Attached

REASON FOR NEW COURSE* New education course consistent with new program standards

Department* School of Nursing

New Course: * ☑ New Course ☐ Experimental (One time offering)

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

PROPOSED CATALOG DESCRIPTION:

Course Designator* NUR

Proposed Course #* 566

Course Type: * Nursing

Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max Length is 30 characters). * Innovations Teaching Learning

Long Course Title* Innovations in Teaching and Learning

Course Description:* Introduces the graduate student to nursing curriculum and course development for a variety of educational settings. Curriculum and course development are analyzed through the lens of institutional policies and regulatory, professional, and ethical standards. Influencing sociopolitical factors, including diversity, equity, and inclusion, on curricular and course design are contemplated. Students are provided with the opportunity to develop in-depth knowledge and expertise in a particular area of nursing as it applies to teaching and learning. Application of the principles of the scholarship of teaching are incorporated in the role of the nurse educator.

Prerequisites: Admission to the MSN program and/or admission to the Nurse Educator Certificate Program.

Corequisites: NUR567

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Credit Hours: * 3

Can this course be repeated for credit? * ○ Yes ◉ No

If YES, total number of credits allowed:	**If YES, total number of completions allowed:**

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.*

☐ Distance Synchronous Learning ☐ Hybrid/Blended
☐ Hyflex ☐ In-Person ☑ Online (Asynchronous)

(For information on Course Components Definitions please see: UMS Data Governance Course Components Definitions)

Course Components (type of course/used by Student Records for MaineStreet)*

☐ Applied Music ☐ Clinical ☐ Field Experience
☐ Independent Study ☐ Laboratory ☑ Lecture
☐ Recitation ☐ Research ☐ Seminar ☐ Simulation
☐ Studio ☐ Thesis ☐ Travel Course

When will this course typically be offered *

☑ Fall ☐ Summer ☐ Spring ☐ Alternating ☐ Variable

Text(s) Planned for Use*

1. Billings, D.M., & Halstead, J.A. (2023). *Teaching in nursing: A guide for faculty* (7th ed.). Elsevier.
2. Chinn, P.L., Kramer, M.K., & Sitzman, K. (2022). *Knowledge development on nursing: Theory and process* (11thed.). Elsevier.
3. American Psychological Association (2020). *Publication manual of the American Psychological Association* (7th ed). APA.

Course Instructor*

Mary Tedesco-Schneck, Associate Professor

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*

- ☐ Yes
- ☑ No

Proposed Resources: Does the course addition or modification require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?*

- ☑ No. The academic unit will not request additional resources for the course
- ☐ Yes

Units Affected: What other academic units are affected (e.g. course overlap, prerequisites)? Have the affected units been consulted? Any concerns expressed? Please explain.*	n/a
Course Frequency: Does the content of this course overlap significantly with other University courses? If so, list the course, explain the overlap, and justify the need for the proposed course.*	n/a

University of Maine School of Nursing
Innovations in Teaching and Learning
NUR 566 Fall 2024

Course Description: Introduces the graduate student to nursing curriculum and course development for a variety of educational settings. Curriculum and course development are analyzed through the lens of institutional policies and regulatory, professional, and ethical standards. Influencing sociopolitical factors, including diversity, equity, and inclusion, on curricular and course design are contemplated. Students are provided with the opportunity to develop in-depth knowledge and expertise in a particular area of nursing as it applies to teaching and learning. Application of the principles of the scholarship of teaching are incorporated in the role of the nurse educator.

Course Credits: 3
Prerequisites: Admission to the MSN program and/or admission to the Nurse Educator Certificate Program.
Co-requisite: NUR567 Innovations in Teaching and Learning Practicum

Course Meeting Day, Time, and Location: The is an asynchronous online course which utilizes Brightspace® as the course management platform. Assignments and course information will be posted within Brightspace®, under the appropriate headings.

Faculty Information:
Mary Tedesco-Schneck PhD, RN, CPNP
Associate Professor
mary.tedescoschneck@maine.edu
Office Hours by Appointment

Required Text:
1. Billings, D.M., & Halstead, J.A. (2023). *Teaching in nursing: A guide for faculty* (7th ed.). Elsevier.
2. Chinn, P.L., Kramer, M.K., & Sitzman, K. (2022). *Knowledge development on nursing: Theory and process* (11th ed.). Elsevier.
3. American Psychological Association (2020). *Publication manual of the American Psychological Association* (7th ed). APA.
4. Additional required readings and videos are available on Brightspace® for each week.

Required Technology: Brightspace®, MaineStreet account and UMaine email are required. A personal computer is recommended. Resources regarding these technologies are posted on Brightspace®.

Teaching Methods: Teaching-learning methods include faculty recorded presentations on selected topics, assigned readings and videos, discussion questions, and written assignments.

Course Objectives	Program Outcomes	Essentials of Nursing Education	NLN Competencies	Evaluation Method
1. Analyze the science of nursing based on nursing theories that inform curricular design and course development. 2. Interpret biological, psychological, and sociopolitical theories that contribute to the science of nursing.	Integrate, translate, and apply knowledge from nursing and other disciplines to provide high quality, safe, culturally sensible, and ethically-based advanced-level nursing practice. **Note:** Nursing, biological, psychological, and sociopolitical theories in the context of curriculum serve as the foundation for nursing education which is focused on patient care.	1.1 Demonstrate an understanding of the discipline of nursing's distinct perspective and where shared perspectives exist with other disciplines. 1.2 Apply theory and research-based knowledge from nursing, the arts, humanities, and other sciences.	Participate in curriculum design and evaluation of program outcomes.	Discussion Board Post and Responses Curriculum Critique Course creation and teaching plan
3. Explore the role and professional standards of the advanced practice nurse in education. 4. Deconstruct student and faculty professional standards and ethical codes that	Integrate, promote, and advance ethical scholarship to advance health and promote best practice.	4.1 Promote the ethical conduct of scholarly activities. 9.3 Demonstrate accountability to the individual, society, and the profession. 9.5 Demonstrate the	Pursue continuous quality improvement in the role of educator using knowledge of legal and ethical issues relevant to higher education and nursing education.	Discussion Board Post and Responses Curriculum Critique

inform curricular design and course development.		professional identity of nursing.		
5. Critique the application ad impact of accrediting and legal regulatory standards on curriculum development.	Integrate, promote, and advance ethical scholarship to advance health and promote best practice.	9.4 Comply with relevant laws, policies, and regulations.	Participate in curriculum design and evaluation of program outcomes by recognizing the influences of accreditation and regulatory standards on curriculum development.	Discussion Board Post and Responses Curriculum Critique
6. Analyze nursing curriculum and courses that reflect healthcare trends and incorporate the role of nursing practice. 7. Discriminate between various theoretical approaches to teaching and learning that support student success and maintain academic standards.	Participate in initiatives that address health equity and improve care delivery and/or outcomes within systems, communities, and populations. Foster caring relationships through the use of communication techniques and a variety of modalities that meet the needs of diverse audiences.	1.1 Demonstrate an understanding of the discipline of nursing's distinct perspective and where shared perspectives exist with other disciplines. 4.1 Advance the scholarship of nursing. 4.2 Integrate best evidence into nursing practice. 4.3 Promote the ethical conduct of scholarly activities.	Participate in curriculum design and evaluation of program outcomes by: • Identifying curriculum that reflects institutional philosophy and mission; current nursing and health care trends; and community/societal needs that prepare graduates for practice in a	Discussion Board Post and Responses Curriculum Critique Course creation and teaching plan

			complex, dynamic, diverse health care environment • Demonstrating knowledge of curriculum development including identification of program outcomes, developing competency statements, writing learning objectives, and selecting learning activities and evaluation strategies	
8. Deconstruct the impact of sociopolitical factors, including diversity, equity, and inclusion, on curricular and course design.	Participate in initiatives that address health equity and improve care delivery and/or outcomes within systems, communities, and populations. **Note:** Curricular/course design that considers the impact of sociopolitical factors, including diversity, equity, and inclusion, supports advocacy for improved	9.3 Demonstrate accountability to the individual, society, and the profession. 9.6 Integrate diversity, equity, and inclusion as core to one's professional identity.	Functions within the educational environment to identify how social, technological, economic, political, and institutional forces impact higher education in general and nursing education	Discussion Board Post and Responses Curriculum Critique Course creation and teaching plan

	healthcare delivery and patient/community health.		specifically.	Analytic essay
9. Apply the scholarship of teaching to the role of the advanced practice nurse in education.	Model and assume accountability for professional expectations of communication, therapeutic relationships, evidence-based practice, and ethical behaviors.	4.1 Advance the scholarship of nursing.	Engage in scholarship acknowledging that scholarship is an integral component of the faculty role, and that teaching is a scholarly activity.	Discussion Board Post and Responses Analytic essay

Course Inclusion

This class strives to be an inclusive community, learning from the many perspectives that come from having differing backgrounds and beliefs. In an ideal world we would all be aware, respectful, and inclusive of each other's differences. I would like to create a learning environment for my students that supports a diversity of thoughts, perspectives and experiences, and honors your identities (including race, gender, class, sexuality, religion, ability, etc.). Like many people I am still in the process of learning about diverse perspectives and identities. To help accomplish this goal:

- If you have a name and/or set of pronouns that differ from those that appear in your official MaineStreet or Brightspace records, please let me know!
- If you feel like your performance in the class is being impacted by your experiences outside of class, please don't hesitate to come and talk with me. I want to be a resource for you.
- If something was said in class (by anyone) that made you feel hurt or uncomfortable, you can discuss the situation privately with me. I am always open to listening to students' experiences, and want to work with students to find acceptable ways to process and address the issue. If uncomfortable talking to me directly, you can notify me of the issue through another source such as your academic advisor, a trusted faculty member, or a peer.
- If for any reason you do not feel comfortable discussing the issue directly with me, I encourage you to seek out another, more comfortable avenue to address the issue. Alternative resources and contacts can be found at UMaine's President's Council on Diversity, Equity and Inclusion at https://umaine.edu/president/council-on-diversity-equity-and-inclusion/

Commitment to Intersectionality:

We are all individuals with multiple sociocultural identities that intersect and shape our worldview through the lens of privilege and oppression. I want to minimize systemic forces of oppression within the classroom such as ableism, classism, racism, sexism, transphobia, and heterosexism in efforts to create a safe learning environment for all of us. I ask that you also join me in this commitment to foster respect for one another, enhance solidarity, and build community." (Adapted from Funtes, et al., 2021)

Gender Name Statement:
Class rosters and University data systems are currently provided to instructors with students' legal names and gender identifications. However, knowing that not all students use their legal names or sex/gender assigned at birth, I am happy to use the name and/or pronouns you use. Prior to our first discussion board post, we will do introductions, at which point you can choose to share with all members of our learning community what name and pronouns you use. Additionally, if these change at any point during course, please let me know and we can develop a way to share this information with others in a way that is comfortable and safe for you. (Adapted from Hakkola, 2021)

Course Policies

Attendance:
This online course will be conducted via Brightspace®. Assignments and course information will be posted on Brightspace®, under the appropriate headings. All students must check Brightspace® frequently – it is recommended at least two times per week. Since online class participation is an important part of this course, all students are expected to contribute to the electronic discussion regularly and to respond to the comments of other students in the class.

Assignment Due Dates:
This online course is asynchronous, meaning that students and professors may work on the course at any time. However, please note the due dates for assignments. Late assignments will result in a zero unless there are justifying circumstances. Faculty must be made aware of these circumstances as soon as they are known. If you are unable to meet the deadline, communicate with faculty before the assignment is due. A mutually acceptable plan to complete coursework can be established.

University of Maine Policies

Academic Honesty Statement:
Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, or generated by software or systems without the explicit approval of the instructor, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to

any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University. Please see the University of Maine System's Academic Integrity Policy listed in the Board Policy Manual as Policy 314: https://www.maine.edu/board-of-trustees/policy-manual/section-314/

Students Accessibility Services Statement
If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, located at the Center for Accessibility and Volunteer Engagement at the UCU, 139 Rangely Rd, um.sas@maine.edu, 207.581.2319, as early as possible in the term. Students may begin the accommodation process by submitting an accommodation request form online and uploading documentation at https://umaine-accommodate.symplicity.com/public_accommodation/. Once students meet with SAS and eligibility has been determined, students submit an online request with SAS each semester to activate their approved accommodations. SAS creates an accessibility letter each semester which informs faculty of potential course access and approved reasonable accommodations; the letter is sent directly to the course instructor. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with me (Mary Tedesco-Schneck) privately as soon as possible.

Course Schedule Disclaimer (Disruption Clause):
In the event of an extended disruption of normal classroom activities (due to COVID-19 or other long-term disruptions), the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

Observance of Religious Holidays/Events:
The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department or University. At the discretion of the instructor, such coursework could be due before or after the examination or assignment. No adverse or prejudicial effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.

A member of any religious group may, without penalty, absent themselves from class, clinical or lab as required in compliance with their religious obligations. Given the diverse religious faiths represented at the University of Maine School of Nursing and acknowledging the nonsectarian nature of the School of Nursing, this policy is intended to apply equitably to all religious groups and to provide opportunities for individuals to meet their religious obligations.

- The student who anticipates the need to be absent to accommodate his or her religious practice must notify faculty in advance of such anticipated absence. This notice should be provided at least one week in advance.
- Exams, assignments are required to be completed prior to the class/clinical/lab date. Clinical and lab make up shall be in compliance with the expectations as stated in each Clinical and Lab syllabus.
- No adverse or prejudicial effect shall result to any student who avails him/herself of the above policy.

For UMaine information regarding religious holidays and events as well as other important dates, please see the link: https://umaine.edu/citl/teaching-resources-2/required-syllabus-information/

Sexual Discrimination Reporting

The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a faculty or staff member who is deemed a "responsible employee" about an experience of sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination involving members of the campus, they are required to report this information to Title IX Student Services or the Office of Equal Opportunity.

If you want to talk in confidence to someone about an experience of sexual discrimination, please contact these resources:

- For confidential resources on campus: Counseling Center: 207-581-1392 or Cutler Health Center: at 207-581-4000.
- For confidential resources off campus: Rape Response Services: 1-800-871-7741 or Partners for Peace: 1-800-863-9909.
- Other resources: The resources listed below can offer support but may have to report the incident to others who can help:
- For support services on campus: Title IX Student Services: 207-581-1406, Office of Community Standards: 207-581-1406, University of Maine Police: 207-581-4040 or 911.

Visit the Title IX Student Services website at http://umaine.edu/titleix/ for more information.

Course Requirements

Assignments and Grading Criteria	
Discussion Board Post and Responses	30%
Curriculum Critique	20%
Analytic Essays (2 Essays each worth 10%)	20%
Course creation and teaching plan	30%

COURSE GRADING:

A	=	100 - 92	C	=	77
A-	=	91 - 90	C-	=	76 - 70
B+	=	89 - 88	D+	=	69 - 68
B	=	87 - 82	D	=	67 - 62
B-	=	81 - 80	D-	=	61 - 60
C+	=	79 - 78			

Course Grade Requirements: The School of Nursing follows the University of Maine Grades and Grading Policy located on the Office of Student Records website. Grades and other student information is confidential and protected by University of Maine policy and the Family Educational Rights and Privacy Act (FERPA). Additional information regarding FERPA is available from the University Of Maine Department Of Student Records.

Grades are assigned as whole numbers are not rounded up. This applies to individual quiz and exam scores, course assignments, and final course grades. Students are expected to achieve a grade of "B-" or higher in all courses. If a student earns a "C" or lower in any course, the student is counseled and may be dismissed from the nursing major. Students who wish to return to the graduate program in nursing after a leave of absence or to re-enroll after withdrawing will re-enter under current curricular requirements. If a significant amount of time has lapsed, additional coursework may be required (UMaine SON Graduate Handbook, 2024).

A grade of "I" (incomplete) will only be used for extreme circumstances and documentation will be required. The student will have a mandatory meeting with faculty to document a plan to clear the "I" grade per UMaine and SON policy. The student cannot progress to a subsequent course with an "I" in a prerequisite or professional course.

Discussion Board Posts and Response(s) ***(There are 8 posts and each is worth 3.75% equally a total of 30%)***

Purpose: Stimulate thoughtful discussion among students and faculty related to course content.

Requirements:

- Posts are submitted in the Discussion Board section of Brightspace®.
- Length of posts should be approximately 650 words which is one 8 ½ by 11-inch paper single spaced.
- A broad prompt is provided for each discussion board posts based on the assigned readings and videos. A response to one or more of the posted responses is required within 24 hours. Continued discussion beyond the 24-hour requirement is encouraged as learning and consideration of various perspectives regarding course content enriches discussions.
- Students and faculty are viewed as self-directed learners who actively seek new knowledge from a variety of sources and are respectful of others' diverse perspectives. Everyone must take responsibility for guarding the confidentiality of students, faculty, and any sensitive information that is shared in this course. Any clinical or work-related exemplars in discussion posts must be de-identified; pseudonyms must be used in reference to a real person.
- References are not required but can be used to provide substance to your responses; if references are provided, they should be no older than 10 years unless they are the landmark studies on the topic. References need not be exclusively from the nursing literature but they should be directly related to nursing/healthcare or to your role as an educator.
- Faculty will submit a grade for each post in the assignment area using the following grading rubric. ***No submission in the assignment area is required by the student.***

Grading Rubric: Discussion Board

Criteria					**Course Objective**
Submission of Discussion Board Post	**0 points** Late. Grade is 0% and no other criteria in this rubric are graded.			**10 points** On-time	9
Response to Discussion Board Post	**0 points** Late.			**10 points** On-time.	9
Content	**25 points** The focus cannot be ascertained from the information provided. Requires major restructuring.	**35 points** The focus is unclear. It is difficult to understand due to poor organization.	**40 points** The focus is clear but could be more precisely defined. It would benefit from restructuring.	**50 points** The focus is easily identified, well organized & easy to navigate.	1-9 Depending on the Discussion Prompt
Grammar, punctuation, capitalization, & spelling/word choice.	**7 points** Coherence of overall meaning unclear due to grammar, punctuation, capitalization, & spelling/word choice. Post requires extensive editing/proofreading in this area.	**10 points** Errors in grammar, punctuation, capitalization, & spelling/word choice make it necessary to reread sentences to discern meaning.	**12 points** Occasional errors in grammar, punctuation, capitalization, & spelling/word choice.	**15 points** No errors in grammar, punctuation, capitalization, & spelling/word choice.	9

Curriculum Critique (worth 18%)

Purpose: The purpose of this assignment is to allow the student the opportunity to analyze a curriculum.

Requirements: Students will be provided with three curriculums from three types of accredited nursing education programs and will chose only one of the curriculums to critique.

- Curriculum #1 will be a BSN Program, Curriculum #2 will be an Acute New Graduate Residency Program, and Curriculum #3 will be a Community Health New Graduate Residency Program.
- Students are provided with guiding questions to critique the chosen curriculum posted on the Assignment in Brightspace®.
- Responses to each question should be 500 to 600 words double-paced in Times Roman 12-point font (2 pages).
- The critique should include a title page and a reference page.

Analytical Essays (2 each worth 20%)

Purpose: To provide an opportunity to analyze an issue that impacts curriculum and course development. Analytical writing is intended to provide an opportunity to dissect and analyze an issue and then synthesize the information to formulate conclusions.

Requirements: An issue that may impact curriculum and course development will be assigned for each analytical essay. Scholarly journal articles that have been assigned specifically for the essay as well as additional articles selected by the student should be used to support the analysis. ***The course textbook, websites, and UpToDate® should not be used*** as it is intended that the student will master the skill of synthesis.

The essay should be 4 pages, double spaced, 12-point font and include a title and a reference page. Headings should not be used.

Organization of the paper should include an introduction, the body of the paper, and a conclusion. The introduction should engage the reader and provide a roadmap of what will be discuss in 1-2 paragraphs ending in a thesis statement that sums up the central point of the essay. The body of the paper should contain information supporting the thesis statement by providing background information, emphasizing specific contributing points, and providing contrasting viewpoints. The conclusion should be 1 paragraph that recaps the analysis reminding the reader of the most important points and a final thought for consideration.

Grading Rubric: Curriculum Critiques and Analytic Essay

Criteria					Course Objective
Content	**15 points** The focus cannot be ascertained from the information provided. No evidence from reliable sources. Requires major restructuring.	**22 points** The focus is unclear. The evidence is weak. It is difficult to understand due to poor organization.	**26 points** The focus is clear but could be more precisely defined. Evidence supports contentions. It would benefit from restructuring.	**30 points** The focus is easily identified & is supported by strong evidence. It is well organized & easy to navigate.	**Curriculum Critiques** 4 & 6 **Analytic Essay** 3 - 6
Development and Support	**20 points** Does not make a meaningful attempt to explain or support ideas using articulate, academic language < 50% of the time.	**30 points** Inadequately or ineffectively explains & defends ideas using articulate, academic language 50% of the time.	**34 points** Develops & supports key points using articulate, academic language 80% of the time.	**40 points** Thoroughly & insightfully explores, explains, & supports each idea using articulate, academic language 100% of the time.	**Curriculum Critiques** 4 & 6 **Analytic Essay** 3 - 6
Grammar, punctuation, capitalization, & spelling/word choice.	**3 points** Coherence of overall meaning unclear due to grammar, punctuation, capitalization, & spelling/word choice. Paper requires extensive editing/proofreading.	**6 points** Errors in grammar, punctuation, capitalization, & spelling/word choice make it necessary to reread sentences to discern meaning.	**8 points** Occasional errors in grammar, punctuation, capitalization, & spelling/word choice.	**10 points** No errors in grammar, punctuation, capitalization, & spelling/word choice.	9

APA Format	**3 points** Greater than 5 errors.	**6 points** No more than 5 errors.	**8 points** No more the 2 errors.	**10 points** No errors.	9
Assignment Requirements	**3 points** Adheres to less than 70% of the assignment requirements.	**6 points** Adheres to 70%-79% of the assignment requirements.	**8 points** Adheres to 80%-89% of the assignment requirements.	**10 points** Adheres to 90%-100% of the assignment requirements.	9

Course creation and teaching plan (worth 30%)

Purpose: The purpose of this assignment is to apply the concepts of course development.

Requirements: Create a course syllabus for one course in your area of expertise from Curriculum #1 BSN Program, Curriculum #2 Acute New Graduate Residency Program, or Curriculum #3 Community Health New Graduate Residency Program. The syllabi template is posted on the Assignment in Brightspace®.

Select one week to develop a teaching plan. The teaching plan should include:

1. Course objective(s) that will be met for the class session.
2. Required readings and other preparatory materials students complete prior to the class session.
3. Teaching plan that lists each class activity and the purpose of each activity.

One innovative teaching strategy.

4. Purpose of the selected strategy.
5. Description of the activity.
6. Description of how the strategy supports the objectives for the class session.

Grading Rubric: Course Creation and Teaching Plan

Criteria					Course Objective
Course Syllabus	**15 points** Adheres to less than 6 of the10 syllabus requirements on the template.	**22 points** Adheres to 6-7/10 syllabus requirements on the template.	**26 points** Adheres to 8-9/10 syllabus requirements on the template.	**30 points** Adheres to 10/10 syllabus requirements on the template.	1, 2, 6, 7
Teaching Plan	**20 points** Adheres to less than 4 of the 6 teaching plan requirements.	**30 points** Adheres to 4/6 teaching plan requirements.	**34 points** Adheres to 5/6 teaching plan requirements.	**40 points** Adheres to 6/6 teaching plan requirements.	1, 2, 6, 7
Grammar, punctuation, capitalization, & spelling/word choice.	**3 points** Coherence of overall meaning unclear due to grammar, punctuation, capitalization, & spelling/word choice. Paper requires extensive editing/proofreading in this area.	**6 points** Errors in grammar, punctuation, capitalization, & spelling/word choice make it necessary to reread sentences to discern meaning.	**8 points** Occasional errors in grammar, punctuation, capitalization, & spelling/word choice.	**10 points** No errors in grammar, punctuation, capitalization, & spelling/word choice.	9
APA Format	**3 points** Greater than 5 errors.	**6 points** No more than 5 errors.	**8 points** No more the 2 errors.	**10 points** No errors.	9

Course Outline

Modules/Dates	Assigned Reading	Course Objective	Assignments
Module One Week 1 & 2 Science of Nursing • Nursing Theory • Theories that Contribute the Science of Nursing	Chinn, P.L., Kramer, M.K., & Sitzman, K. (2022). *Knowledge development on nursing: Theory and process* (11th ed.). Elsevier. **Chapter 1:** Nursing's Fundamental Patterns of Knowing **Chapter 2:** Historical Context of knowledge Development in Nursing **Chapter 7:** Empiric Knowledge Development **Chapter 8:** Description and Critical Reflection of Empiric Theory	Analyze the science of nursing based on nursing theories that inform curricular design and course development. Interpret biological, psychological, and sociopolitical theories that contribute to the science of nursing.	Discussion Board Post #1
Module Two Week 3 & 4 • Course Design • Mapping Course Objectives to Program Outcomes and Credentialing Standards	Chinn, P.L., Kramer, M.K., & Sitzman, K. (2022). *Knowledge development on nursing: Theory and process* (11th ed.). Elsevier. **Chapter 6:** Aesthetic Knowledge Development **Chapter 10:** Integrating Expression of Knowledge in Practice **Chapter 11:** Strengthening the Discipline Billings, D.M., & Halstead, J.A. (2023). *Teaching in nursing: A guide for faculty* (7th ed.). Elsevier. **Chapter 10:** Designing Courses and Learning Experiences	Create nursing curriculum and ***courses*** that reflect healthcare trends and incorporate the role of nursing practice.	Discussion Board Post #2 Analytic Essay #1

Module Three Week 5 & 6 • Teaching Learning Strategies • Inclusive Teaching and Learning Environments	Billings, D.M., & Halstead, J.A. (2023). *Teaching in nursing: A guide for faculty* (7th ed.). Elsevier. **Chapter 2:** Strategies to Support Diverse Learning Needs of Students **Chapter 4:** Teaching Students with Disabilities **Chapter 14**: Theoretical Approaches to Teaching and Learning in Nursing **Chapter 16:** Evidence-Based Teaching Strategies to Promote Learning **Chapter 18:** Teaching in the Clinical Learning Environment **Chapter 19:** Teaching and Learning Using Simulations **Chapter 20:** Using Technology to Facilitate Learning in the Classroom **Chapter 21:** Teaching and Learning at a Distance	Discriminate between various theoretical approaches to teaching and learning that support student success and maintain academic standards.	Discussion Board Post #3
Module Four Week 7, 8, & 9 • Factors that Influence Curriculum Development • Methods of Curriculum Devolvement	Billings, D.M., & Halstead, J.A. (2023). *Teaching in nursing: A guide for faculty* (7th ed.). Elsevier. **Chapter 5:** Forces and Issues Influencing Curriculum Development **Chapter 6:** An Introduction to Curriculum Development **Chapter 7:** Philosophical Foundations of the Curriculum **Chapter 8**: Curriculum Models for Undergraduate Programs	Create ***nursing curriculum*** and courses that reflect healthcare trends and incorporate the role of nursing practice.	Discussion Board Post #4 Analytic Essay #2

Module Seven Week 13	Chinn, P.L., Kramer, M.K., & Sitzman, K. (2022). *Knowledge development on nursing: Theory and process* (11th ed.). Elsevier. **Chapter 3:** Emancipatory Knowledge and Knowledge Development Billings, D.M., & Halstead, J.A. (2023). *Teaching in nursing: A guide for faculty* (7th ed.). Elsevier. **Chapter 17:** Multicultural Education in Nursing	Deconstruct the impact of sociopolitical factors, including diversity, equity, and inclusion, on curricular and course design.	Discussion Board Post #7 Course Creation and Teaching Plan
Module Eight Week 14	Chinn, P.L., Kramer, M.K., & Sitzman, K. (2022). *Knowledge development on nursing: Theory and process* (11th ed.). Elsevier. **Chapter 5:** Personal Knowledge Development	Apply the scholarship of teaching to the role of the advanced practice nurse in education.	Discussion Board Post #8

SED - 510 - Teaching Early Childhood Special Education

Graduate New Course Proposal Form - 2023/24 AY

General Catalog Information

Graduate New Course Proposal Form

Read before you begin

FILL IN all fields required marked with an *.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

Requested Action: ***Note*: A complete syllabus is required for all new courses.**

Please be sure that all elements required for a syllabus at the University of Maine are present. We recommend you work closely with the syllabus guidelines found at www.umaine.edu/citl.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

Please attach any required files by navigating to the right side menu and clicking "Files".

Graduate course proposals, modifications, or eliminations must be submitted to the Graduate School no later than the 3rd of each month. Please refer to the Graduate School website for the Curriculum Committee meetings schedule as well as instructions on completing this form. [https://umaine.edu/graduate/facultystaff-resources/curriculum-committee/]

Syllabus* ☑ Attached

REASON FOR NEW COURSE* The course is required to align program coursework with new Maine DOE teaching regulations that were updated in Summer 2022.

Department* School of Learning and Teaching

New Course: * ☑ New Course ☐ Experimental

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

PROPOSED CATALOG DESCRIPTION:

Course Designator* SED

Proposed Course #* 510

Course Type: * Special Education Early Intervention

Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max Length is 30 characters). *	Teaching Early Childhood Sped
Long Course Title*	Teaching Early Childhood Special Education
Course Description:*	*The emphasis of SED 510 is on early childhood special education for young children with disabilities in-group settings. Our discussions will include history and rationale, legal foundations, theoretical perspectives service delivery models, family-professional partnerships, assessment practices, and curriculum development. This course provides an introduction to early childhood special education for young children and their families through a broad range of experiences, including professional readings; videos; and independent student activities. History and rationale, legal foundations, philosophical and theoretical perspectives, service delivery models, family-professional partnerships, assessment practices, and curriculum development are addressed from an inclusive, culturally competent, family-centered perspective.* *Course Note:* **You must be working with young children birth to five years old to complete course requirements.**
Prerequisites:	**Departmental Consent required.**
Corequisites:	

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Credit Hours: * 3

Can this course be repeated for credit? * ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.*

☐ Distance Synchronous Learning ☐ Hybrid/Blended ☐ Hyflex
☐ In-Person ☑ Online (Asynchronous)

(For information on Course Components Definitions please see: UMS Data Governance Course Components Definitions)

Course Components (type of course/used by Student Records for MaineStreet)*

☐ Applied Music ☐ Clinical ☐ Field Experience
☐ Independent Study ☐ Laboratory ☑ Lecture
☐ Recitation ☐ Research ☐ Seminar ☐ Simulation
☐ Studio ☐ Thesis ☐ Travel Course

When will this course typically be offered * ☐ Fall ☐ Summer ☐ Spring ☐ Alternating ☑ Variable

Text(s) Planned for Use*

Required Texts:

• Cook, R., Klein, M., & Chen, D. (2020) Adapting Early Childhood Curricula for Children with Special Needs, 10th Edition.

• Book Club Choice (please select one of the two choices presented in

Brightspace) • Assigned readings in folder

Course Instructor*	SED faculty
Proposed Resources: Does the course addition or modification require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?*	☐ No. The academic unit will not request additional resources for the course ☑ Yes
Units Affected: What other academic units are affected (e.g. course overlap, prerequisites)? Have the affected units been consulted? Any concerns expressed? Please explain.*	None
Course Frequency: Does the content of this course overlap significantly with other University courses? If so, list the course, explain the overlap, and justify the need for the proposed	No

course.*

THE UNIVERSITY OF MAINE

College of Education and Human Development

Leading Educational Excellence

RESEARCH • INNOVATION
COLLABORATION • ENGAGEMENT

Mission Statement: Drawing on a rich tradition of excellence, the College of Education and Human Development at Maine's flagship university is committed to leading innovation in Maine's PK-12 schools, higher education institutions, and agencies that support academic, cognitive, physical, social and emotional development. We promote effective teaching and learning, identify critical issues, conduct research, and disseminate findings. Collaboration with external partners and experts across the University of Maine, we prepare our graduates to engage in ethical conduct, reflective practice, meaningful inquiry, and data-driven decision making in order to meet the increasingly diverse needs of our state and the world in which we live.

SED 510
Teaching Early Childhood Special Education
Fall 2024

Brightspace: https://courses.maine.edu/d2l/home
IT Help Center: https://umaine.edu/it/

Instructor: Jamie L. Treworgy, Ph.D., BCBA **Office:** Off Campus/Adjunct **Email:** jamie.treworgy@maine.edu	**Primary Delivery Format:** Asynchronous (with short synchronous learning opportunities) **Class Location:** Online (Brightspace) Live Meetings ***Thursdays from 6:30-7:30pm*** **Office hours:** By Zoom appointment, schedule via email

Preferred method of communication with instructor: Students are encouraged to first contact their instructor via email. Emails will be responded to within 24 hours on weekdays and 48 hours on weekends and university holidays. Students may also to request to meet by appointment in person, or via phone or Zoom.

Course Information

Course Description

The emphasis of SED 510 is on early childhood special education for young children with disabilities in-group settings. Our discussions will include history and rationale, legal foundations, theoretical perspectives service delivery models, family-professional partnerships, assessment practices, and curriculum development.

This course provides an introduction to early childhood special education for young children and their families through a broad range of experiences, including professional readings; videos; and

independent student activities. History and rationale, legal foundations, philosophical and theoretical perspectives, service delivery models, family-professional partnerships, assessment practices, and curriculum development are addressed from an inclusive, culturally competent, family-centered perspective. Note: You must be working with young children birth to five year old to complete course requirements.

Prerequisites: Departmental Consent required.

Credits: 3

Course Delivery Method

Teaching Methods

Course content will be delivered through a variety of channels including assigned readings, online course modules, videos, case studies, and group discussions, among others. Assignments will be designed to provide direct experiences with course content and to extend learning about concepts and issues addressed in this course. Students will be encouraged to reflect on the course content and to relate to their own experiences throughout. The content in this practical course is meant to be implemented in the educational environment.

Mode of Instruction

This is an asynchronous online course. Each week, students will move through a series of readings and practical application activities, and these assignments are presented in weekly folders on the course Brightspace site. Each week, students deepen their understanding of the content through application of concepts in the educational environment and reflection upon implementation and progress monitoring.

Time Options

This is an asynchronous online course. However, the course will hold ***Thursdays from 6:30- 7:30pm*** available for live meetings, group meetups or video conferencing (TBD during the course – check course schedule).

Digital Services Required

• Learning Management System: Brightspace https://courses.maine.edu/d2l/home •
Web Conferencing Service: Zoom (as needed)
• Video recording/sharing service: Kaltura
• Collaboration and Communication: (*Dates TBA during the first week of class)* •
Library: https://library.umaine.edu/
• Computer requirements: Access to a computer with high speed internet •
Other:

- Adobe Flash
- Adobe Acrobat Reader or compatible program (ex. Preview on a Mac computer)
- Microsoft Office for completing assignments or compatible software; this can be downloaded for free from the University of Maine Information Technology Software website *(Note: You must be able to export the file to a Word document or PDF, per the instructor's directions—Pages files cannot be accessed)*

- APA Style website or APA manual (6th edition)
- Access to My Campus portal for all things related to the University system, including UMaine email: https://umaine.edu/portal/
- All communication and Brightspace announcements are sent to your **maine.edu** email address
- *Other materials (ex. webcam, microphone, Microsoft Word)*

Technical Assistance
If you are unfamiliar with the Brightspace platform, you are encouraged to take the self-guided tutorial, Brightspace, available at https://courses.maine.edu/d2l/le/discovery/view/home

If you need assistance with technology, please contact the UMaine IT Help Desk: https://umaine.edu/it/, 800-696-4357, or help@maine.edu

Quick Contact Information for UMaine Online Students (Brightspace, Kaltura, Zoom) Phone: 1-877-947-4357
Email: dlltechhelp@maine.edu
• Fall and Spring semesters: 8 am to 5 pm (Monday-Friday)
• Summer, Winter, and Breaks: 8 am to 4:30 pm (Monday-Friday)
• Limited email support nights, weekends, school breaks, and holidays

For Software, Hardware, and UMS Account Support, contact IT Support Services Phone: 207-581-2506 or 800-696-4357
Email: techsupport@maine.edu
• Academic year support hours: 7:30 am to 7 pm (Monday-Thursday), 7:30 am to 5 pm (Friday), and 2 pm to 8 pm (Sunday)

Approaches to Learning

The learning experiences of this course are structured to challenge and support students in the acquisition of new knowledge and skills. This course will be taught using a variety of pedagogical approaches including short lectures, class discussion (Brightspace), and individual research. Each member of the class is considered a teacher, a learner, and an important contributor to the group. As such, it is important that all students read the assigned work and be prepared for thoughtful discussion.

Purposes of Course

1. Discuss the legal basis of early childhood special education, including supporting legislation and litigation.
2. Discuss the dimensions of diversity among families and methods early childhood special educators can use to become more culturally competent, sensitive, and responsive to families from diverse backgrounds.
3. Demonstrate an understanding of evidence-based practice and implications for early childhood special education.
4. Discuss the rationale and principles of family-centered approaches to delivering early

childhood special education services.
5. Describe, compare, and contrast the theoretical perspectives that influence and inform early childhood special education curricula and decision making.

Student Learning Outcomes for Course

1. Articulate the rationale for providing early childhood special education in inclusive early childhood settings and discuss the issues involved in creating inclusive community childcare/early education settings.
2. Demonstrate the ability to identify, gather, and integrate research findings related to the early care and education of young children with disabilities to inclusive practice and translating research findings into Plain language.
3. Recognize the impact of disability on families and develop strategies for developing partnerships with families.

Instructional Materials and Resources

Required Texts:

- Cook, R., Klein, M., & Chen, D. (2020) Adapting Early Childhood Curricula for Children with Special Needs, 10th Edition.
- Book Club Choice (please select one of the two choices presented in Brightspace) • Assigned readings in folder

The EI/ECSE Standards (2020)
The Early Interventionist/Early Childhood Special Educator (EI/ECSE) Standards represent the first standards to focus specifically on the preparation of professionals who work with young children ages birth through 8 who have or are at-risk for developmental delays and disabilities and their families, across home, classroom and community settings.

Standard	Sub Standards	Assignments
Child Development and Early Learning Candidates understand the impact of different theories and philosophies of early learning and development on assessment, curriculum, instruction, and intervention decisions. Candidates apply knowledge of normative developmental sequences and variations, individual differences within and across the range of abilities, including developmental delays and disabilities, and other direct and indirect contextual features that support or constrain children's development and learning. These contextual factors as well as social, cultural, and linguistic diversity are considered when facilitating meaningful learning experiences and individualizing intervention and instruction across contexts.	***Child Development and Early Learning*** 1.3 Candidates apply knowledge of biological and environmental factors that may support or constrain children's early development and learning as they plan and implement early intervention and instruction. 1.4 Candidates demonstrate an understanding of characteristics, etiologies, and individual differences within and across the range of abilities, including developmental delays and disabilities, their potential impact on children's early development and learning, and implications for assessment, curriculum, instruction, and intervention.	***Letter to Author*** ***Research Projects*** ***Classroom Supports Project***
Partnering with Families Candidates use their knowledge of family centered practices and family systems theory to develop and maintain reciprocal partnerships with families. They apply family capacity-building practices as they support families to make informed decisions and advocate for their young children. They engage families in opportunities that build on their existing strengths, reflect current goals, and foster family competence and confidence to support their children's development and learning.	***Partnering with Families*** 2.2 Candidates communicate clear, comprehensive, and objective information about resources and supports that help families to make informed decisions and advocate for access, participation, and equity in natural and inclusive environments. 2.3 Candidates engage families in identifying their strengths, priorities, and concerns; support families to achieve the goals they have for their family and their young child's development and learning; and promote families' competence and confidence during assessment, individualized planning, intervention, instruction, and transition processes.	***Research Projects***

Collaboration and Teaming Candidates apply models, skills, and processes of teaming when collaborating and communicating with families and professionals, using culturally and linguistically responsive and affirming practices. In partnership with families and other professionals, candidates develop and implement individualized plans and successful transitions that occur across the age span. Candidates use a variety of collaborative strategies while working with	***Collaboration and Teaming*** 3.2 Candidates use a variety of collaborative strategies when working with other adults that are evidence- based, appropriate to the task, culturally and linguistically responsive, and take into consideration the environment and service delivery approach.	***Assignments*** ***Research Projects*** ***Classroom Supports Project***

and supporting other adults.		
Application of Curriculum Frameworks in the Planning of Meaningful Learning Experiences Candidates collaborate with families and professionals to use an evidence-based, developmentally appropriate, and culturally responsive early childhood curriculum addressing developmental and content domains. Candidates use curriculum frameworks to create and support universally designed, high quality learning experiences in natural and inclusive environments that provide each child and family with equitable access and opportunities for learning and growth.	***Application of Curriculum Frameworks in the Planning of Meaningful Learning Experiences*** 5.1 Candidates collaborate with families and other professionals in identifying an evidence-based curriculum addressing developmental and content domains to design and facilitate meaningful and culturally responsive learning experiences that support the unique abilities and needs of all children and families.	***Assignments*** ***Research Projects*** ***Classroom Supports Project***

Using Responsive and Reciprocal Interactions, Interventions, and Instruction Candidates plan and implement intentional, systematic, evidence-based, responsive interactions, interventions, and instruction to support all children's learning and development across all developmental and content domains in partnership with families and other professionals. Candidates facilitate equitable access and participation for all children and families within natural and inclusive environments through culturally responsive and affirming practices and relationships. Candidates use data-based decision-making to plan for, adapt, and improve interactions, interventions, and instruction to ensure fidelity of implementation.	***Using Responsive and Reciprocal Interactions, Interventions, and Instruction*** 6.2 Candidates engage in reciprocal partnerships with families and other professionals to facilitate responsive adult-child interactions, interventions, and instruction in support of child learning and development. 6.3 Candidates engage in ongoing planning and use flexible and embedded instructional and environmental arrangements and appropriate materials to support the use of interactions, interventions, and instruction addressing developmental and academic content domains, which are adapted to meet the needs of each and every child and their family. 6.4 Candidates promote young children's social and emotional competence and communication, and proactively plan and implement function-based interventions to prevent and address challenging behaviors. 6.5 Candidates identify and create multiple opportunities for young children to develop and learn play skills and engage in meaningful play	***Assignments*** ***Letter to Author*** ***Research Projects*** ***Classroom Supports Project***

	experiences independently and with others across contexts. 6.6 Candidates use responsive interactions, interventions, and instruction with sufficient intensity and types of support across activities, routines, and environments to promote child learning and development and facilitate access, participation, and engagement in natural environments and inclusive settings.	

Grading and Course Expectations

Expectations for Student Engagement

Example: This is a graduate level course that builds upon the foundation of previous knowledge and experience in early intervention with infants and toddlers and/or undergraduate course work. Each student will get from the course what he or she put into the course. Attitudes distinguish and characterize each student. Individuals who approach the course with a genuine desire to learn, and a willingness to work hard to do so, will achieve that end. Each student is expected to demonstrate self-discipline as they budget and use their time effectively. They are expected to take the initiative to be aware of and prepared for upcoming events.

Course Guidelines Summary

	Before Class Sessions	During Class	Assignments
Be Respectful	Come prepared to engage in discussions and activities.	Use appropriate and professional language. Honor diverse opinions and perspectives. Use "person-first" language when addressing someone with a disability. Ex. "A person with autism"	Obtain instructor permission ***prior*** to due dates if more time is needed.
Be Responsible	Read and/or view expected context ***before*** class sessions. Contact instructor if you are unable to attend class.	Attend class sessions and actively participate in discussions and activities. Maintain personal, student and school confidentiality. Ensure technology is turned off to eliminate distractions for yourself and others.	Submit original work. Maintain academic integrity. Submit assignments on time. Submit electronically via Brightspace

Be Informed	Follow syllabus, guided notes and class presentations regarding content to be read or viewed.	Sign up for Brightspace notifications. Check your email regularly. Be alert to cancellations due to weather, instructor emergency, etc.	Identify assignment due dates on Brightspace's class calendar, guided notes, class presentations and syllabus. Ask questions about assignments in class, through email or during office hours. Assignments can be revised with instructor permission.

Attendance and Participation
This is a fast-paced and interactive on-line class. Students "attend" class by accessing learning materials and completing activities posted on the Brightspace site, and by participating actively in group meet ups and discussion boards. Missing deadlines on more than one occasion without prior permission or a valid excuse will result in a discussion with the instructor about the student's ability to continue with the class. **Thursdays from 6:30-7:30pm** need to be held open for weekly live meetings and/or could be used for small group meetings and discussions (check course schedule).

Course Readings
Students will be assigned readings from the required text and relevant research articles or supplemental materials, which will be posted to the Brightspace course site. Students are expected to demonstrate a thorough understanding of all reading content through incorporation into practical application. *Additional readings will be posted on Brightspace and may be assigned throughout the semester.*

Course Assignments
CAREFULLY READ THE DESCRIPTION AND DIRECTIONS to ensure each component of an assignment is addressed. Rubrics and additional information about each assignment will be posted on the Brightspace site. Make use of this information and ask questions if you need further clarification. Assignments may be submitted before the due date, but will not be graded and returned until after the due date.

General Guidelines:

- ***All assignments should reflect professionalism in writing.***
- *Headings and page numbers should be used to organize the assignments.* • *Follow all assignment-specific guidelines (e.g., specific headers, requirements)* • *Include your name, project title, and date at the top of your assignment. Assignments without this information will be returned and will not be assessed.*
- *All assignments requiring references are to be cited and referenced in American Psychological Association (APA) style.*
- *Assignments should be your original work and not plagiarized. You may not work with another classmate on an assignment unless otherwise noted.*

• *Assignments should be submitted as a pdf or Word .doc or .docx unless otherwise noted or by permission of the instructor. Pages documents will not be accepted.* • *All assignments must be submitted via Brightspace.*

• *When corresponding by email,* ***include the course number, your last name, and the assignment in the subject line,***

• *Retain a personal copy of all assignments.*

Assignment Scoring Rubrics

Book Club/ Letter to the Author Project	1 assignment x 10 points =	10 Points
Directions: Students will read a book on early education as part of a "book club." Meetings will be held in small groups (online), and students will read together and discuss the book together. Students will then write a letter to the author describing the impact of this book on their personal philosophy and implications for teaching.		

Research Topics and Tip Sheets	3 assignment x 14 points =	42 Points

Directions:

Part 1 – Research Topics

Students will select a disability and identify, read and collect information from at least three professional literature sources that focus on the disability. Professional literature sources may include professional journal articles (at least one) text or other professional books, and websites. Students will use the information from these professional resources to gain information on the following topics:

1) Symptoms or characteristics of the disability
2) Causes of the disability
3) Common treatment approaches
4) How the disability impacts the child's development (motor, cognitive, social-emotional and communication)
5) Implications for teaching a child with such a disability in an inclusive classroom.

Examples of disabilities that might be selected include deafness, autism, Down syndrome, cerebral palsy, Fragile X syndrome, fetal alcohol syndrome, visual impairment, autism, deafness, cleft palate, epilepsy, attention-deficit hyperactivity disorder, etc. Please select a disability about which you want to know more.

Part 2 – Tip Sheets

Using Plain Language writing, create a tip sheet or newsletter (no more than 2 pages) to colleagues new to inclusion or families seeking knowledge about how their child's educational journey will begin. Provide research-based strategies for successfully including a child with the disability you researched in an inclusive Prek-3 classroom setting.

Examples will be provided.

Classroom Supports Projects	3 assignment x 10 points =	30 Points

Directions:

There are 3 classroom support projects that will focus on social/emotional, environmental, and planning to aid in the learning and understanding of expectations for students with disabilities. Rubrics will be provided for each.

1. **Physical Environment (Visual Supports)**
2. **Social Environment (Social Story)**
3. **Temporal Environment (Daily Schedule)**

Weekly Discussion Threads	7 assignments x 2 points = 1 assignment x 4 points =	18 Points
Directions: Participate in a bi/weekly discussion thread on various topics related to course content and assignments with the instructor and other students in the course. 1. Ability to respond to the bi/weekly prompt with meaningful dialogue concerning scholarly research, evidence-based practice, and your own perspective regarding this population of students by THURSDAY each week (1 point). 2. Ability to read, critique, and support the positions and analyses of your peers in your responses to other classmates by SUNDAY each week (1 point).		

Evaluation

Each of the aforementioned components will be weighted as follows to determine the final grade in the course.

1. Letter to Author	10 Points
2. Research Topics and Tip Sheets (3)	42 Points
3. Classroom Support Projects (3)	30 Points
4. Weekly Discussion Threads	18 Points
Total	**100 points**

Grading Scale:

A = 95 – 100%	B+ = 86 – 89%	C+ = 76 – 79	D+ = 66 – 69%	F = Below 59%
A- = 90 – 94%	B = 83 – 85%	C = 73 – 75%	D = 63 – 65%	
	B- = 80 – 82%	C- = 70 –72%	D- = 60 – 62%	

Course Policies

- **All Assignments for the week are due by SUNDAY AT 11:59pm**

Assignment Resubmission

- At the instructor's discretion, students will be invited to resubmit assignments for a revised grade. *Resubmission should occur within 3 days of grading, unless otherwise noted by instructor.*

Late Assignments

- Late assignments will receive a deduction of 1 point per day.

Incomplete Assignments

- Students are expected to submit assignments in full by the due date. Assignments will be graded with submitted material at time of due date.

College of Education and Human Development policy on incompletes in Graduate Classes

A grade of *I* (Incomplete) is assigned if a student has been doing work of acceptable quality but, for reasons satisfactory to the instructor, has not completed all of the work required to earn credit by the end of the semester or session. The work must be completed and submitted to the instructor by the date agreed to with the instructor, but not later than one year (i.e., 12 months) from the end of the semester or session in which the incomplete was granted. An *I* remains on the transcript permanently if not resolved or if a written request for an extension is not approved within the time period for removing the incomplete. A request for an exception to regulation to extend an incomplete beyond one year must be approved by the instructor, the student's advisor (for degree students), Graduate Program Coordinator, and Dean. The request should note the circumstances necessitating the extension, the work that remains unfinished, and a specific deadline for completion. An extension will be granted only under unusual circumstances. For grades of *I*, it is the student's responsibility to reach and maintain an understanding with the instructor concerning the timely completion of the work.

Conceptual Framework for College of Education and Human Development

- Research, Innovation, Collaboration, and Engagement are four themes that guide the work of the faculty in the College of Education and Human Development at the University of Maine.
- Research is important because decisions should be made based on systematic collection and analysis of evidence. This can take many forms, including quantitative studies, qualitative studies, and action research projects. Without evidence, educators may slide into making decisions based on unexamined assumptions, pre-conceived ideas, and even stereotypes of learners.
- Innovation is important because we live in a world characterized by both continuities and changes. We need to recognize what is of value based on past experience, while at the same time being attune to changes in such areas as technology, the economy, the natural world, and human populations.
- Collaboration is critical because people with different experiences and perspectives, and from different backgrounds, have much to offer to an understanding of educational issues in relation to the larger society in which educational institutions and practices are embedded. Prek-12 educators, educators in higher education institutions, parents, members of community organizations, and other community leaders all have important perspectives on learners and learning.
- Engagement is essential to both teaching and learning. In order to be successful, learners must be motivated to pursue knowledge and understanding, recognizing that learning is relevant and meaningful to their lives in both present and future. Educators likewise must be engaged in discovering what educational practices are most likely to motivate students. Both must become intrinsic, lifelong learners.
- Cutting across these themes is the belief that leadership in addressing contemporary and future issues and needs is a reflective process that requires thoughtful and evaluative analysis of the many forces and factors that affect teaching, learning, and schooling. The ultimate outcome of reflective practice and leadership is to be proactive in implementing educational practices that

are equitable, meaningful, and relevant for student and societal welfare. Developing your capacity for reflective thought and action is a core outcome of this course.

Campus Policies

Academic Honesty Statement:
Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, or generated by software or systems without the explicit approval of the instructor, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University. Please see the University of Maine System's Academic Integrity Policy listed in the Board Policy Manual as Policy 314 (*Date Issued: September 1, 2020):
https://www.maine.edu/board-of-trustees/policy-manual/section-314/

Students with disabilities statement
If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, 121 East Annex, um.sas@maine.edu, 581.2319, as early as possible in the term. Students may begin the accommodation process by submitting an accommodation request form online and uploading documentation at https://umaine-accommodate.symplicity.com/public_accommodation/. Once students meet with SAS and eligibility has been determined, students submit an online request with SAS each semester to activate their approved accommodations. SAS creates an accessibility letter each semester which informs faculty of potential course access and approved reasonable accommodations; the letter is sent directly to the course instructor. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with *Jamie L. Treworgy, Ph.D., BCBA* privately as soon as possible.

Course Schedule Disclaimer (Disruption Clause)
In the event of an extended disruption of normal classroom activities, the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

Observance of Religious Holidays/Events
The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department or University. At the discretion of the instructor, such coursework could be due before or after the examination or assignment. No adverse or prejudicial effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent

from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.

Sexual Discrimination Reporting
The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination involving members of the campus, your teacher is required to report this information to the campus Office of Sexual Assault & Violence Prevention or the Office of Equal Opportunity.

If you want to talk in confidence to someone about an experience of sexual discrimination, please contact these resources:

For confidential resources on campus: Counseling Center: 207-581-1392 or Cutler Health Center: at 207-581-4000.

For confidential resources off campus: Rape Response Services: 1-800-871-7741 or Partners for Peace: 1-800-863-9909.

Other resources: The resources listed below can offer support but may have to report the incident to others who can help:

For support services on campus: Office of Sexual Assault & Violence Prevention: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911. Or see the OSAVP website for a complete list of services at http://www.umaine.edu/osavp/

Diversity
Ours is a diverse nation founded upon the protection of rights and liberties regardless of race, ethnicity, socio-economic status, gender, religion, exceptionalities, language, and sexual orientation. The Council for the Accreditation of Educator Preparation (CAEP), identifies diversity as two groups: one being individual differences (e.g., personality, interests, learning modalities, and life experiences), and the other being group differences (e.g., race, ethnicity, ability, gender identity, gender expression, sexual orientation, nationality, language, religion, political affiliation, and socio-economic backgrounds) and expects that diversity will be a pervasive characteristic of any quality preparation program. Other identity groups include, but are not limited to, age, community, family status, institutional affiliations. Schooling, especially public schooling, continues to have a central role in educating our nation's citizens for life in this diverse and pluralistic society. Choosing to teach in public schools means accepting the moral and ethical responsibilities inherent in building a strong democratic republic. In this course you will have many opportunities to examine your beliefs regarding diversity and the challenges of providing equitable and fair educational opportunities for all.

Confidentiality Statement
All academic records of students are maintained in the highest of confidence as directed by FERPA (Family Educational Rights and Privacy Act). For more information on the University of Maine FERPA Policy, please click on the following

link http://catalog.umaine.edu/content.php?catoid=50&navoid=1001

Use of Electronic Communications
All users at the University of Maine are expected to use network systems with proper regard for the rights of others and the University. For more information on the University of Maine Electronic Communications Policy, please click on the following link http://www.umaine.edu/it/policies/communication.php

Non-Discrimination and Non-Sexist Language

Non-Discrimination and Non-Sexist Language
In complying with the letter and spirit of applicable laws and pursuing its own goals of diversity, the University of Maine System does not discriminate on the grounds of race, color, religion, sex, sexual orientation, transgender status, gender, gender identity or expression, ethnicity, national origin, citizenship status, familial status, ancestry, age, disability physical or mental, genetic information, or veterans or military status in employment, education, and all other programs and activities. The University provides reasonable accommodations to qualified individuals with disabilities upon request. The following person has been designated to handle inquiries regarding non-discrimination policies: Director of Equal Opportunity, 5713 Chadbourne Hall, Room 412, University of Maine, Orono, ME 04469-5713, 207.581.1226, TTY 711 (Maine Relay System).

The University of Maine has made a firm public commitment to non-sexist language in all its classrooms and communications. This course will put that policy into practice by using both masculine and feminine terms, where both genders are intended, rather than so-called generic masculine terms. For further information, see http://www.umaine.edu/womensstudies/home/non sexist-language-policy

Course Schedule

Date/Topic	Readings	Assignments
Week 1 **August 21st** • Introduction to Inclusive Early Education • Standards/ NAEYC-DEC • Legislation and Families Thursday meeting – whole group 6:30-7:30pm	Cook, Klein & Chen- Chapter 1 ***READ for*** ***BOOK CLUB***	**DUE August 27th** • Introduction Discussion Thread • Person First Language Discussion Thread

Week 2 **August 28th** • In Partnership with Families • Developing Individualized Intervention Plans and Programs for Monitoring Progress Thursday meeting for small groups 6:30-7:30pm	Cook, Klein & Chen- Chapter 2 Cook, Klein & Chen- Chapter 3 ***READ for BOOK CLUB***	**DUE September 3rd** • Pick 3 disabilities to research and begin research (not due, but pace yourself and begin) • Discussion Thread
Week 3 **September 5th** • Curriculum Models as the Context for Instructional Practice • Designing Instructional Programs Thursday meeting for small groups 6:30-7:30pm	Cook, Klein & Chen- Chapter 4 ***READ for BOOK CLUB***	**DUE September 10th** • Continue researching 3 disabilities (not due, but pace yourself and keep working) • Discussion Thread
Week 4 **September 11th** • Considerations for Teaching Children with Specific Disabilities Thursday meeting – whole group 6:30-7:30pm	Cook, Klein & Chen- Chapter 5	**DUE September 17th** • Letter to the Author Due • Research Topic – Tip Sheet #1 Due • Discussion Thread

Week 5 **September 18th** • Promoting Emotional and Social Development • Helping Young Children Develop Motor and Self-Care Skills Thursday meeting for small groups 6:30-7:30pm	Cook, Klein & Chen- Chapter 6 Cook, Klein & Chen- Chapter 7	**DUE September 24th** • Classroom Support #1 Due • Discussion Thread
Week 6 **September 25th** • Nurturing Communication Skills • Encouraging the Development of Cognitive Skills and Literacy Thursday meeting – whole group 6:30-7:30pm	Cook, Klein & Chen- Chapter 8 Cook, Klein & Chen- Chapter 9	**DUE October 1st** • Classroom Support #2 Due • Research Topic – Tip Sheet #2 Due • Discussion Thread

Week 7 **October 2nd** • Challenging Behavior Thursday meeting for small groups 6:30-7:30pm	Web Resources (see Brightspace)	**DUE October 8th** • Classroom Support #3 Due • Discussion Thread
Week 8 **October 10th** • Teaming: Collaboration, Problem Solving, and Inclusion Support	Cook, Klein & Chen- Chapter 10	**DUE October 15th** • Research Topic – Tip Sheet #3 Due • Course evaluations • Discussion Thread (Final Thoughts)

WLE - 511 - Animal Demographic Estimation

Graduate New Course Proposal Form - 2023/24 AY

General Catalog Information

Graduate New Course Proposal Form

Read before you begin

FILL IN all fields required marked with an *.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

Requested Action: ***Note*: A complete syllabus is required for all new courses.**

Please be sure that all elements required for a syllabus at the University of Maine are present. We recommend you work closely with the syllabus guidelines found at www.umaine.edu/citl.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

Please attach any required files by navigating to the right side menu and clicking "Files".

Graduate course proposals, modifications, or eliminations must be submitted to the Graduate School no later than the 3rd of each month. Please refer to the Graduate School website for the Curriculum Committee meetings schedule as well as instructions on completing this form. [https://umaine.edu/graduate/facultystaff-resources/curriculum-committee/]

Syllabus* ☑ Attached

REASON FOR NEW COURSE* This is a course I have traditionally offered as special topics, with prior enrollment of 10-12 students from WFCB, EES, and SMS. It serves an important role as a quantetative course for students interested in animal ecology.

Department* Department of Wildlife, Fisheries, and Conservation Biology

New Course: * ☑ New Course ☐ Experimental (One time offering)

EFFECTIVE SEMESTER:

Semester* Fall **Year*** 2024

PROPOSED CATALOG DESCRIPTION:

Course Designator* WLE **Proposed Course #*** 511

Course Type: * Wildlife Ecology

Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max Length is 30 characters). * Animal Demographic Estimation

Long Course Title* Animal Demographic Estimation

Course Description:* This courses covers the quantitative estimation of animal demographic and population parameters, such as survival, density, and abundance, using information from marked and unmarked animal subjects. It will apply principles in maximum likelihood and Bayesian estimation, statistical inference using both frequentist and model selection principles, and will work primarily in the R programing languedge. The course is a combination of lecture and computer laboratory exercises, along with discussion of primary literature.

Prerequisites: None

Corequisites: None

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Credit Hours: * 2-3

Can this course be repeated for credit? * ○ Yes ◉ No

If YES, total number of credits allowed:	**If YES, total number of completions allowed:**

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.*

☐ Distance Synchronous Learning ☐ Hybrid/Blended ☐ Hyflex ☑ In-Person
☐ Online (Asynchronous)

(For information on Course Components Definitions please see: UMS Data Governance Course Components Definitions)

Course Components (type of course/used by Student Records for MaineStreet)*

☐ Applied Music ☐ Clinical ☐ Field Experience ☐ Independent Study
☑ Laboratory ☐ Lecture ☐ Recitation ☐ Research ☐ Seminar
☐ Simulation ☐ Studio ☐ Thesis ☐ Travel Course

When will this course typically be offered * ☐ Fall ☐ Summer ☐ Spring ☐ Alternating ☑ Variable

Text(s) Planned for Use* online/open access

Course Instructor* Dr. Erik Blomberg

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*

☐ Yes
☑ No

Proposed Resources: Does the course addition or modification require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?*

☑ No. The academic unit will not request additional resources for the course ☐ Yes

Units Affected: What other academic units are affected (e.g. course overlap, prerequisites)? Have the affected units been consulted? Any concerns expressed? Please explain.*	None
Course Frequency: Does the content of this course overlap significantly with other University courses? If so, list the course, explain the overlap, and justify the need for the proposed course.*	None

WLE 511 – Animal Demographic Estimation

Course Description and Syllabus

Instructor:

Dr. Erik Blomberg
Office: Room 206 Nutting Hall
erik.blomberg@maine.edu
Phone: 207-581-2904

Number of credit hours: This course may be taken for 2 or 3 credits – differences in the requirements for each option are listed below.

Class Meeting Times and Locations:

Lecture and Discussion periods: Tuesdays from 9:30 a.m. to 10:45 a.m. Room 218 Nutting

Lab: Thursday 9:30 a.m. to 12:30 p.m. Room 230 Nutting.

Course Prerequisites: None

Course Description: This courses covers the quantitative estimation of animal demographic and population parameters, such as survival, density, and abundance, using information from marked and unmarked animal subjects. It will apply principles in maximum likelihood and Bayesian estimation, statistical inference using both frequentist and model selection principles, and will work primarily in the R programing languedge. The course is a combination of lecture and computer laboratory exercises, along with discussion of primary literature.

Term: Variable

Office Hours: Thursdays from 9:30 a.m. to 10:45 a.m. Room 206 Nutting. This time period will also be available for scheduling individual project consulting periods.

Course Overview: Population dynamics describe the underlying spatiotemporal variation in organismal abundance, and changes in abundance are driven by variation in demographic traits (age-specific survival, fecundity). In this course we will explore the quantitative methods available for estimating and evaluating sources of variation in animal demographics, based largely on field studies of marked animals. We will use a combination of lecture material, discussion of relevant primary literature, and applied computer exercises to explore these topics. We will focus on analysis using the

software Program MARK, and its companion R package, RMark, to conduct capture-mark-recapture analyses. During the latter half of the semester we will also spend some time on distance sampling, spatial mark-recapture, and other topics also implemented in Program R using a variety of packages. You will leave the course able to better apply demographic methods, implemented in R, to your own research. I will also give you an expanded perspective on quantitative estimation and data analysis in general, which will help you to explore additional methods on your own in the future as needed for specific applications.

Learning Objectives: Students who master the materials presented in this course will be able to do the following:

1) Organize and summarize data collected from marked and unmarked animals to facilitate demographic analyses.

2) Understand the assumptions inherent to conducting capture-mark-recapture and related analyses, including the role of field sampling in ensuring that data collection matches model assumptions.

3) Conduct standard animal demographic (e.g. capture-mark-recapture) analyses using Program R, and correctly interpret and present the statistical outputs of these analyses.

4) Clearly communicate findings of demographic analyses, and provide critical assessment of other's work in these areas.

Class Format: The course will be a mix of lectures, computer lab exercises, and discussion of primary literature. A tentative schedule is listed below.

There will also be a required independent project. Students completing the course for 2 credits will be required to present their independent projects during the last week of class, while students completing the course for 3 credits will also work with the instructor to write a research manuscript detailing their independent project.

Required Texts:

We will use two primary texts for the course, both of which are available free and online. I've listed assigned chapters for most weeks, and these are split between assigned readings and supplemental lab materials. You should do the readings in advance of lecture for each week, as they will give you a greater capacity to grasp the materials we cover in class. You may find the supplemental readings useful for completing the lab assignments, but I leave it up to you whether you want to invest this time or not. There

are no quizzes or exams in the course, so readings are "required" only in that they will help you with self-learning and in taking as much away from the course as possible. I recommend completing readings prior to the class the week they are listed.

Estimation of Parameters for Animal Populations by Powel and Gale will be our main conceptual text for most weeks. This book is available for free as a downloadable e-book from the author's webpage:

http://larkinpowell.wixsite.com/larkinpowell/estimation-of-parameters-for-animal-pop

You can also purchase a hard copy if you like for the bargain price of $17.50 – see purchasing links on the same website linked above.

Program MARK: A Gentle Introduction by Evan Cooch and Gary White (note that Gary White is an Alumni of our graduate program). This text is available for free at http://www.phidot.org/software/mark/docs/book/. In addition to being an extremely useful user's manual for Program MARK, it also provides very accessible introductory detail on many demographic estimation techniques. In some cases the Gentle Introduction contains information that is not readily available from other published sources. You will see chapters of the Gentle Introduction assigned for most weeks, and I will supplement these readings with other required readings as needed.

Other Reference Papers: There are a number of published articles that I find to be great resources for demographic analysis in general. I've listed some as required readings for lab, and others as background reference materials for the weekly discussions. I don't necessarily expect you to read all of the reference papers I've listed during the semester, but I hope this list will provide you with starting points for your projects, and also will serve as a useful reference for you in the future. A few general references I would encourage you to become familiar with are: Arnold 2010, Beissinger et al. 2006, Sandercock 2006, Powell 2007, Johnson and Omland 2004, and Lebreton et al. 1992. (Full citations listed below).

Software: All the software we will use during the course that are available as free downloads. These include Program MARK (http://www.phidot.org/software/mark/), Program R (http://www.r-project.org/), R Studio (https://www.rstudio.com/), and JAGS (http://mcmc-jags.sourceforge.net/). These will be available in the Nutting Hall Computer Lab, but I recommend you also download and install them on your personal machines so that you can work outside of the lab. Some of these software (e.g.

Program MARK) do not play well with mac-based operating systems, but should work smoothly on any Windows-based PC.

Course Requirements and Grading: Grading in the course will consist of a combination of participation (20 pts), leading an in-class discussion (20 pts), weekly lab assignments (30 pts total), and an independent research project (30 pts). For students completing the course for 3 credits, an additional assignment of a research manuscript will be required (50 pts).

Participation: The success of a course like this depends on meaningful participation from all involved (including the instructor!). For that reason active participation in both the computer lab exercises and the class discussions are two major course requirements. If you have to miss class, I appreciate the courtesy of being informed ahead of time. Twenty total points will come from participation.

Discussion: In addition to being an active participant in the class, you will be required to present lecture materials and lead one discussion period during the semester. This will require a greater amount of preparation compared to a typical week. For example, you should read the suggested background readings for that week as a starting point, and also follow up on citations contained in your discussion article that are necessary to fully understand the paper. You will need to sufficiently understand the materials presented in the paper to guide the rest of the class through discussion, answer any questions that may arise, and to steer us through the inevitable awkward silences. You should come to class prepared with a handout or short power-point that contains a breakdown of the article and some questions to guide discussion. To assist you in this process, we should meet individually the week prior to your assigned discussion to go over the article and discuss the most salient points. Leading this discussion will be worth 20 points.

Assignments: Each week there will be a short assignment that will parallel that week's lab, which I'll expect you to complete outside of class. My goal with these assignments is not to burden you with busy work, but instead to reinforce the skills we covered during class that particular week. Assignments will typically consist of an additional analysis to complete on your own that will be very similar to the analysis we conduct together in lab. Deliverables will be simple (e.g. AIC tables or basic figures) and I will mainly be checking the assignments to make sure you completed the analysis correctly. Assignments will be graded as pass/fail, and you have an infinite number of chances, conditioned on the end of the semester, to complete the assignment correctly. Your cumulative assignment grade will be the proportion of correct assignments you complete, and it will be worth 30 points.

Independent Project: The final major requirement of the course will be to conduct an independent data analysis, which you will present and defend during the last week of classes. Ideally the project will involve your own data, but I can also provide you with a dataset if needed. Expectations for the project, including a formal handout describing the project assignment, are available on Brightspace, and we will discuss them during the first week of class. We should meet individually during the first month or so of the semester to talk about your plan for completing your analysis, and I also expect we will meet throughout the semester to check in on the project and so I can help you with issues as they arise. You should take the initiative to set these meetings, but I will check in periodically if I haven't heard anything from you. The independent project will be worth 30 points.

Research manuscript (3 credits option only): Students enrolled in the 3 credit version of the course will complete a research manuscript on their independent projects, which will be worth an additional 50 points. These manuscripts will generally follow standard conventions for a paper to be submitted to a peer-reviewed journal, and much more information is provided in a handout available on Brightspace. In addition to discussing your project analysis throughout the semester, we will also work on development of your manuscript. The research manuscript is worth 50 points.

Grade breakdown for 2-credit option: Assignments – 40 pts (40%); Discussion Lead – 20 pts (20%); Analysis and Presentation – 40 pts (40%).

Grade breakdown for 3-credit option: Assignments – 40 pts (27%); Discussion Lead – 20 pts (13%); Analysis and Presentation – 40 pts (27%); Research Manuscript – 50 pts (33%).

Your final grade will be assigned as follows:

A 90 – 100%

B 80-89%

C 70-79%

D 60-69%

F < 60%

Online Resources: We will use Brightspace as our primary learning platform for this course, and you should be able to access it through your MyCampus Portal. I will post all relevant course materials on Brightspace under the "'Content" page, including the syllabus, lecture files, assignments, data files for lab, etc. All required readings and papers for discussion will be posted in the "Readings and Other Resources" folder, but

you will have to retrieve reference readings on your own. All lab materials (handouts, scripts, data files) will be posted under the "Lab Materials" page.

Academic and Professional Integrity: I expect that students in my courses will hold themselves to high professional standards. University policies on Academic Honesty may be found at the website of the Division of Student Affairs (http://umaine.edu/studentaffairs/jad/) and the Universities Academic Honest Statement is listed at the end of this syllabus. In addition to University policies, our respective professional societies provide us with guidance on standards of professional conduct and ethics.

The Wildlife Society:

http://joomla.wildlife.org/index.php?option=com_content&task=view&id=769)

The American Fisheries Society:

http://fisheries.org/cert_standardsofprofessionalconduct

The Society for Conservation Biology:

http://www.conbio.org/about-scb/who-we-are/code-of-ethics

Course Schedule (Subject to change at my discretion)

Week 1 (18/20 Jan).

Lecture: Introduction to course and Capture-Mark-Recapture; maximum likelihood and probability primers.

Lab: Introduction to Program MARK

Readings: Powell and Gayle Chapters 3, 4, 7 (read Ch 1 and 2 if you want to be really thorough)

Supplements for Lab: Cooch and White Chapters 1 - 3.

Week 2 (25/27 Jan).

Lecture: Mark-recapture analysis in a linear modeling framework

Lab: Use of the Design Matrix in Program MARK.

Readings: Powell and Gayle Chapters 6, 10.

Supplements for Lab: Cooch and White Chapters 4 and 6

Week 3 (1/3 Feb).

Lecture: Model selection and philosophy of inference.

Lab: Use of continuous covariates in Program MARK

Supplements for Lab: Cooch and White Chapter 11

Week 4 (8/10 Feb).

Lecture: Survey of mark-recapture analysis techniques

Lab: GOF Testing + Introduction to Program R and RStudio.

Readings: None

Week 5 (15/17 Feb)

Discussion: Nest survival analysis

Lab: Introduction to the RMark package and nest survival analysis.

Readings: Cooch and White Chapter 17 and Appendix C.

Week 6 (22/24 Feb)

Discussion: Closed capture models

Lab: Closed capture models using RMark.

Readings: Powell and Gayle Chapter 8

Supplement for lab: "Gentle" Introduction Chapter 14.

Week 7 (1/3 Mar)

Discussion: Multi-state models

Lab: Multi-state capture-mark-recapture using RMark

Readings: Powell and Gayle Chapter 12

Supplements for Lab: "Gentle" Introduction Chapter 10.

Week 8 (8/10 Mar)

Discussion: Robust design models

Lab: Robust design capture-mark-recapture using RMark

Readings: Powell and Gayle Chapter 13

Supplements for Lab: "Gentle" Introduction Chapter 15.

March 14-20 (Spring Break)

Week 9 (22/24 Mar)

Discussion: Presentation and interpretation of results

Lab: Variance propagation using the Delta Method and Bootstrapping

Week 10 (29/31 Mar)

Discussion: Methods for spatially-explicit mark-recapture

Lab: Spatially-explicit mark-recapture using the oSCR package

Readings: Efford and Fewster 2013

Week 11 (5/7 Apr)

Discussion: Bayesian vs Frequentist Inference

Lab: Primer of Bayesian analysis and implementation using JAGS

Readings: Kery and Shaub Chapter 5

Week 12 (12/14 Apr)

Discussion: Bayesian estimation via MCMC

Lab: Capture-Mark-Recapture in a Bayesian Framework

Readings: Kery and Shaub Chapter 5

Week 13 (19/21 Apr)

Discussion: Integrated population models

Lab: Bayesian CJS in JAGS

Readings: Kery and Shaub Chapter 5

Week 14 (26/27 Apr) – Project Presentations. *These will be held during lecture, lab and discussion periods to accommodate all students.*

Discussion Schedule: *We will populate a google sheet with specific paper citations and links, as well assignment of discussion leads, following the first week of class. This link will be available on Brightspace.*

Finals Week – There will be no scheduled final to allow students to get an early start on summer field work. I will be available during finals week to provide feedback on student projects.

Course Bibliography: *All citations given above should be listed below, plus some bonus references!*

Alisauskas, R. T., and D. K. Kellet. 2014. Age-specific in situ recruitment of female king eiders estimated with mark-recapture. The Auk 131:129-140.

Anderson, D. R. 2001. The need to get the basics right in wildlife field studies. The Wildlife Society Bulletin 29: 1294-1297.

Anderson, D. R. 2003. Response to Engeman: Index values rarely contribute to reliable information. Wildlife Society Bulletin 31:288-291.

Anderson, D. R., K. P. Burnham, and B. R. Crain. 1978. A log-linear approach to estimation of population size using the line transect method. Ecology 59:190-193.

Arnold, T. W. 2010. Uninformative parameters and model selection using Akaike's Information Criterion. Journal of Wildlife Management 74: 1175–1178.

Beissinger, S. R., et al. 2006. Modelling approaches in avian conservation and the role of field biologists. Ornithological Monographs No. 59.

Brownie, C., J. E. Hines, J. D. Nichols, K. H. Pollock, and J. B. Hestbeck. 1993. Capture–recapture studies for multiple strata including non-Markovian transitions. Biometrics 49:1173–1187.

Burnham, K. P., and D. R. Anderson. 1984. The need for distance data in transect counts. Journal of Wildlife Management. 48: 1248-1254.

Drewry, J. M., F. T. Van Manen, D. M. Ruth. 2013. Density and Genetic Structure of black bears in coastal South Carolina. Journal of Wildlife Management 77: 153-164.

Dinsmore, S. J., G. C. White, and F. L. Knopf. 2002. Advanced techniques for modeling avian nest success. Ecology 83: 3476-3488.

Engeman, R. M. 2003. More on the need to get the basics right: population indices. Wildlife Society Bulletin 31: 286-287

Frick, W. F., D. S. Reynolds, and T. H. Kunz. 2010. Influence of climate and reproductive timing on demography of little brown myotis *Myotis lucifugus*. Journal of Animal Ecology 79: 128-136.

Harihar, A., Pandav, B., MacMillan, D. C. 2014. Identifying realistic recovery targets and conservation actions for tigers in a human-dominated landscape using spatially explicit densities of wild prey and their determinants. Diversity and Distributions DOI: 10.1111/ddi.12174

Johnson, J. B., and K. S. Omland. 2004. Model selection in ecology and evolution. Trends in Ecology and Evolution 19: 100-108.

Karanth, K. U., A. M. Gopalaswamy, N. S. Kumar, S. Vaidyanathan, J. D. Nichols, and D. I. Mackenzie. 2011. Monitoring carnivore populations at the landscape scale: occupancy modeling of tigers from sign surveys. Journal of Applied Ecology

Kendall, W. L., and J. D. Nichols. 1995. On the use of secondary capture-recapture samples to estimate temporary emigration and breeding proportions. Journal of Applied Statistics 22: 751-762.

Kendall, W. L., J. D. Nichols, and J. E. Hines. 1997. Estimating temporary emigration using capture-recapture data with Pollock's robust design. Ecology 78: 563-578.

Kendall, W. L., J. E. Hines, and J. D. Nichols. 2003. Adjusting multi-state capture–recapture models for misclassification bias: manatee breeding proportions. Ecology 84:1058–1066

Lebreton, J. D., K. P. Burnham, J. Clobert, and D. R. Anderson. 1992. Modeling survival and testing biological hypotheses using marked animals: a unified approach with case studies.

Lebreton, J. D., and R. Pradel. 2002. Multistate recapture models: modelling incomplete individual histories. Journal of Applied Statistics 29: 353-369.

Mayfield, H. F. 1975. Suggestions for calculating nest success. The Willson Bulletin 87: 456-466.

MacKenzie, D. I., and J. A. Royle. 2005. Designing occupancy studies: general advice and allocating survey effort. Journal of Applied Ecology 42: 1105-1114.

MacKenzie, D. I., J. D. Nicholas, J. E. Hines, M. G. Knutson, and A. B. Franklin. 2003. Estimating site occupancy, colonization, and local extinction when a species is detected imperfectly. Ecology 84: 2200-2207

Nichols, J. D., and W. L. Kendall. 1995. The use of multi-state capture-recapture models to address questions in evolutionary ecology. Journal of Applied Statistics 22: 835-846.

Nichols, J. D., J. E. Hines, J. D. Lebreton, and R. Pradel. 2000. Estimation of contributions to population growth: a reverse-time capture-recapture approach. Ecology 81: 3362-3376.

Pilastro, A., G. Tavecchia, and G. Marin. 2003. Long living and reproduction skipping in the fat dormouse. Ecology 84:1784-1792.

Pollock, K. H. 1982. A capture-recapture design robust to unequal probability of capture. Journal of Wildlife Management 46: 752-757.

Pollock, K. H., Winterstein, S. R., Bunk C. M., & Curtis, P. D. 1989. Survival analysis in telemetry studies: the staggered entry design. Journal of Wildlife Management 53: 7-15.

Powell, L. A. 2007. Approximating variance of demographic parameters using the delta method: a reference for avian biologists. Condor 109:949–954.

Pradel, R. 1996. Utilization of capture-mark-recapture for the study of recruitment and population growth rate. Biometrics 52: 703-709.

Rice, M. B., D. A. Haukos, J. A. Dubovsky, and M. C. Runge. 2010. Continental survival and recovery of northern pintails using band-recovery data. Journal of Wildlife Management 74: 778-787.

Rivalan, P. et al. 2005. Trade-off between current reproductive effort and delay to next reproduction in the leatherback sea turtle. Oecologia 145:564-574.

Romesburg, H.C. 1981. Wildlife science: gaining reliable knowledge. Journal of Wildlife management 45: 293-313.

Rotella, J. J., S. J. Dinsmore, and T. L. Shaffer. 2004. Modelling nest-survival data: a comparison of recently developed methods that can be implemented in MARK and SAS. Animal Biodiversity and Conservation 27:187-204.

Rotella, J. J., W. A. Link, T. Chambert, G. E. Stauffer, and R. A. Garrott. 2012. Evaluating the demographic buffering hypothesis with vital rates estimated for Weddell seals from 30 years of mark-recapture data. Journal of Animal Ecology 81: 162-173.

Saab, V. A., R. E. Russell, J. Rotella, J. G. Dudley. 2011. Modeling nest survival of cavity-nesting birds in relation to postfire salvage logging. Journal of Wildlife Management 75: 794-804.

Sandercock, B.K. 2006. Estimation of demographic parameters from live encounter data: a summary review. Journal of Wildlife Management 70:1504-1520.

Smith, H. C., K. Pollock, K. Waples, S. Bradley, and L. Bejder. 2013. Use of robust design to estimate seasonal abundance and demographic parameters of a coastal bottlenose dolphin population. http://dx.doi.org/10.1371/annotation/369119db-d9ca-4473-9390-89ee0c2a532f

White, G. C., W. L. Kendall, R. J. Barker. 2005. Mulitstate survival models and their extensions in Program MARK. Journal of Wildlife Management 70:1521-1529.

Zabel, R. W., et al. 2005. Survival and selection of migrating salmon from capture-recapture models with individual traits. Ecological Applications 15:1427-1439.

University of Maine administrative policy statements (expanded versions of some statements may be found at https://umaine.edu/provost/faculty-staff-resources/syllabus-guidelines-for-faculty/**):**

Academic Honesty Statement: Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, or generated by software or systems without the explicit approval of the instructor, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University. Please see the University of Maine System's Academic Integrity Policy listed in the Board Policy Manual as Policy

314 (***Date Issued:** September 1, 2020): https://www.maine.edu/board-of-trustees/policy-manual/section-314/

Last Updated: 07.07.2023

Students Accessibility Services Statement *[This should be customized to include the instructor's name]*:

If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, 121 East Annex, um.sas@maine.edu, 581.2319, as early as possible in the term. Students may begin the accommodation process by submitting an accommodation request form online and uploading documentation at https://umaine-accommodate.symplicity.com/public_accommodation/. Once students meet with SAS and eligibility has been determined, students submit an online request with SAS each semester to activate their approved accommodations. SAS creates an accessibility letter each semester which informs faculty of potential course access and approved reasonable accommodations; the letter is sent directly to the course instructor. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with me (the instructor of the course) privately as soon as possible.

Last Updated: 06.28.2023

Course Schedule Disclaimer (Disruption Clause): In the event of an extended disruption of normal classroom activities (due to COVID-19 or other long-term disruptions), the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

Last Updated: 08.17.2020

Observance of Religious Holidays/Events: The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department or University. At the discretion of the instructor, such coursework could be due before or after the examination or assignment. No adverse or prejudicial effects shall result to a student's grade

for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.

Last Updated: 08.17.2020

Sexual Discrimination Reporting

The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of **sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination** involving members of the campus, **your teacher is required to report** this information to Title IX Student Services or the Office of Equal Opportunity.

If you want to talk in confidence to someone about an experience of sexual discrimination, please contact these resources:

For *confidential resources on campus*: **Counseling Center: 207-581-1392** or **Cutler Health Center: at 207-581-4000**.

For *confidential resources off campus*: **Rape Response Services:** 1-800-871-7741 or **Partners for Peace**: 1-800-863-9909.

Other resources: The resources listed below can offer support but may have to report the incident to others who can help:

For *support services on campus*: **Title IX Student Services: 207-581-1406**, **Office of Community Standards: 207-581-1409**, **University of Maine Police: 207-581-4040 or 911**. Or see the Title IX Student Services website for a complete list of services (open in a new window) . Also, Student Wellness Resource Center (opens in a new window).

Last Updated: 08.17.2020

ENG - 698 - Independent Study

Graduate New Course Proposal Form - 2023/24 AY

General Catalog Information

Graduate New Course Proposal Form

Read before you begin

FILL IN all fields required marked with an *.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

Requested Action: ***Note*: A complete syllabus is required for all new courses.**

Please be sure that all elements required for a syllabus at the University of Maine are present. We recommend you work closely with the syllabus guidelines found at www.umaine.edu/citl.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

Please attach any required files by navigating to the right side menu and clicking "Files".

Graduate course proposals, modifications, or eliminations must be submitted to the Graduate School no later than the 3rd of each month. Please refer to the Graduate School website for the Curriculum Committee meetings schedule as well as instructions on completing this form. [https://umaine.edu/graduate/facultystaff-resources/curriculum-committee/]

Syllabus* ☑ Attached

REASON FOR NEW COURSE* For roughly the last ten years, we have offered a competitive third year of TA funding known as the Wicks Distinguished Teaching Fellowship. To keep the Wicks Fellows enrolled for 6 hours a term so that they are full-time students and so can be funded, we have used ENG 697 (our current designator for an independent study). This has reuslted in a biannual headache for CLAS, whom we must petition to count these 6 hours as courses as "in-load" (i.e., uncompensated) for the faculty member who is sponsoring the Wicks Fellow. 697 will be designated "in load" for perpetuity; the proposed course (698) will be the home for any future independent studies which *would* be compensated -- extremely rare (none has ever been offered that I am aware of) but useful to have on the books just in case.

Department* English

New Course: * ☑ New Course ☐ Experimental

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

PROPOSED CATALOG DESCRIPTION:

Course Designator* ENG

Proposed Course #* 698

Course Type: * English

Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max Length is 30 characters). * Independent Study

Long Course Title* Independent Study

Course Description:* This course is in the ENG graduate catalog as a remedy for the exceptionally rare situation that is only resolvable by an out-of-load independent study with a member of the graduate faculty.

Prerequisites: Graduate Standing in English

Corequisites:

Corequisites:

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Credit Hours: * 3

Can this course be repeated for credit? * ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? * ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation. *

☐ Distance Synchronous Learning ☐ Hybrid/Blended ☐ Hyflex ☑ In-Person
☐ Online (Asynchronous)

(For information on Course Components Definitions please see: UMS Data Governance Course Components Definitions)

Course Components (type of course/used by Student Records for MaineStreet) *

☐ Applied Music ☐ Clinical ☐ Field Experience ☐ Independent Study
☐ Laboratory ☐ Lecture ☐ Recitation ☐ Research ☑ Seminar
☐ Simulation ☐ Studio ☐ Thesis ☐ Travel Course

When will this course typically be offered * ☐ Fall ☐ Summer ☐ Spring ☐ Alternating ☑ Variable

Text(s) Planned for Use* Negotiated with instructor

Course Instructor* Appointed as needed

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?* ☐ Yes ☑ No

Proposed Resources: Does the course addition or modification require additional department or institutional facilities, support and/or resources, e.g. new lab facilities, computer support and services, staffing (including graduate teaching assistants), or library subscriptions and resources?*	☑ No. The academic unit will not request additional resources for the course ☐ Yes
Units Affected: What other academic units are affected (e.g. course overlap, prerequisites)? Have the affected units been consulted? Any concerns expressed? Please explain.*	n/a
Course Frequency: Does the content of this course overlap significantly with other University courses? If so, list the course, explain the overlap, and justify the need for the proposed course.*	n/a

ENG 698: Independent Study

3 hours
Prerequisite: Graduate Standing in English.
Modality: In-person

Course Description: Designates an out-of-load independent study with a member of the graduate faculty that contributes to a Program of Study approved by the Chair and Graduate Coordinator.

Faculty Information: Any member of the English graduate faculty with the relevant expertise can theoretically direct an independent study.

Instructional Materials and Methods

A reading list and assignments commensurate with general expectations for a graduate seminar would be arranged in advance and approved by the Graduate Coordinator and Department Chair.

Course Goals:

Relevant course goals would be applied from the course 698 is substituting for.

Instructional Objectives:

Instructional objectives will be to provide as nearly as possible a version of the course the candidate needs to complete their degree/concentration.

Student Learning Outcomes

Student Learning Outcomes will as closely as possible mirror those usually experienced in the course the candidate needs to complete their degree/concentration.

Course Expectations, Course Schedule, Attendance and Participation would be subject to the relevant instructional materials and methods but would be approved by the

Graduate Coordinator and Department Chair.

Course Grades: Grades in ENG 698 are consistent with departmental guidance on evaluation of graduate seminars, explained in more detail in the *UMaine Master of Arts in English: Resources, Policies, and Procedures* Handbook. With respect to final course grades, the relevant section is:

> While faculty have different philosophies about what constitutes "A" level work (*i.e.*, some assess all projects meeting expectations at this level, whereas some award an A- for work at this level and reserve "A" for exceptional work), you can reasonably interpret an **A or A-** as entirely **satisfactory**, a **B+** as falling **somewhat short of expectations**, and a **B or B-** as serious signals of **concern**.
>
> When in doubt about course expectations or the quality of your work during or after the term, it's *always* best to ask. Our program expectations are characterized in more detail in our *MA Degree Outcomes* and the *Descriptive Assessment Guidelines* for the MA Degree Portfolio. These expectations – and this vocabulary for describing them – are shared among the graduate faculty and should help facilitate useful conversations about growth *and* continuity as you develop in our program.

Academic Honesty Statement:

Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, or generated by software or systems without the explicit approval of the instructor, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University.

Please see the University of Maine System's Academic Integrity Policy listed in the Board Policy Manual as Policy 314: https://www.maine.edu/board-of-trustees/policy-manual/section-314/

Students Accessibility Services Statement

[This should be customized to include the instructor's name]: If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, 121 East Annex, um.sas@maine.edu, 581.2319, as early as possible in the term. Students may begin the accommodation process by submitting an accommodation request form online and uploading documentation at https://umaine-accommodate.symplicity.com/public_accommodation/. Once students meet with SAS and eligibility has been determined, students submit an online request with SAS each semester to activate their approved accommodations. SAS creates an accessibility letter each semester which informs faculty of potential course access and approved reasonable accommodations; the letter is sent directly to the course instructor. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with me (the instructor of the course) privately as soon as possible.

Course Schedule Disclaimer (Disruption Clause):

In the event of an extended disruption of normal classroom activities (due to COVID-19 or other long-term disruptions), the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

Observance of Religious Holidays/Events:

The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department or University. At the discretion of the instructor, such coursework could be due before or after the examination or assignment. No adverse or prejudicial effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.

Sexual Violence Policy

[There are two versions of this statement. You must include either the long version or the short version in your syllabus.]

Long Version:

Sexual Discrimination Reporting

The University of Maine is committed to making campus a safe place for students. *Because of this commitment, if you tell a faculty or staff member who is deemed a* "responsible employee" about sexual discrimination, they are required to report this information to Title IX Student Services or the Office of Equal Opportunity.

Behaviors that can be "sexual discrimination" include sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct, and gender discrimination. Therefore, all of these behaviors must be reported.

Why do teachers have to report sexual discrimination?

The University can better support students in trouble if we know about what is happening. Reporting also helps us to identify patterns that might arise – for example, if more than one person reports having been assaulted or harassed by the same individual.

What will happen to a student if a teacher reports?

An employee from Title IX Student Services or the Office of Equal Opportunity will reach out to you and offer support, resources, and information. You will be invited to meet with the employee to discuss the situation and the various options available to you.

If you have requested confidentiality, the University will weigh your request that no action be taken against the institution's obligation to provide a safe, nondiscriminatory environment for all students. If the University determines that it can maintain confidentiality, you must understand that the institution's ability to meaningfully investigate the incident and pursue disciplinary action, if warranted, may be limited. There are times when the University may not be able to honor a request for confidentiality because doing so would pose a risk to its ability to provide a safe, nondiscriminatory environment for everyone. If the University determines that it cannot maintain confidentiality, the University will advise you, prior to starting an investigation and, to the extent possible, will share information only with those responsible for handling the institution's response

The University is committed to the well-being of all students and will take steps to protect all involved from retaliation or harm.

If you want to talk in confidence to someone about an experience of sexual discrimination, please contact these resources:

For *confidential resources on campus*: **Counseling Center: 207-581-1392** or **Cutler Health Center: at 207-581-4000.**

For *confidential resources off campus*: **Rape Response Services:** 1-800-871-7741 or **Partners for Peace**: 1-800-863-9909.

Other resources: The resources listed below can offer support but may have to report the incident to others who can help:

For *support services on campus*: **Title IX Student Services: 207-581-1406, Office of Community Standards: 207-581-1406, University of Maine Police: 207-581-4040 or 911.**

Visit the Title IX Student Services website at umaine.edu/titleix/ for more information.

Short Version:

Sexual Discrimination Reporting

The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a faculty or staff member who is deemed a "responsible employee" aboutt an experience of sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination involving members of the campus, they are required to report this information to Title IX Student Services or the Office of Equal Opportunity.

If you want to talk in confidence to someone about an experience of sexual discrimination, please contact these resources:

For *confidential resources on campus*: **Counseling Center: 207-581-1392** or **Cutler Health Center: at 207-581-4000.**

For *confidential resources off campus*: **Rape Response Services:** 1-800-871-7741 or **Partners for Peace**: 1-800-863-9909.

Other resources: The resources listed below can offer support but may have to report the incident to others who can help:

For *support services on campus*: **Title IX Student Services: 207-581-1406, Office of Community Standards: 207-581-1406, University of Maine Police: 207-581-4040 or 911.**

Visit the Title IX Student Services website at umaine.edu/titleix/ for more information.

DSE - 503 - Systems Foundations of Data Science and Engineering

Graduate Course Modification Form - 2023/24 AY

General Catalog Information

Graduate Course Modification Form

Read before you begin

FILL IN all fields required marked with an * after importing data.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

*Faculty who are converting a course for online delivery, or making substantive changes to an existing course delivered online, are strongly encouraged to work with the Center for Innovation in Teaching and Learning (CITL) on those modifications: https://umaine.edu/citl/instructional-design-2/

REASON FOR COURSE MODIFICATION:* We added DSE 502 which is equivalent to SIE 507 as a new course; it needs to be added to the prerequisites.

MODIFICATION:*
- ☐ Designator Change
- ☐ Credit Change
- ☐ Cross Listing
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☑ Prerequisite Change
- ☐ Addition of Electronic Learning Component*
- ☐ Conversion of an existing on-site Course to an online Course*

Department* Data Science & Engineering

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

CATALOG DESCRIPTION:

Current Course Designator*	DSE
Current Course #*	503
Proposed Course Designator	
Proposed Course #	
Current Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters).*	Systems Foundations of DSE
Proposed New Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters)	
Current Long Course Title*	Systems Foundations of Data Science and Engineering
Proposed Long Course Title	
Current Course Description*	This course provides an introduction and overview of the underlying building blocks of big data stack architecture and infrastructure. It covers the foundational concepts and techniques of data acquisition, data storage, high-performance computing, and parallel data analysis. It provides hands-on experiments using advanced computing platforms and modern software tools to perform parallel data-intensive computing.
Proposed Course Description	
Current Prerequisite(s)	DSE 502 Programming Foundations of Data Science and Engineering or instructor's permission
Proposed Prerequisite(s)	DSE 502 or SIE 507 or instructor's permission
Current Corequisite(s)	

Proposed Corequisite(s)

If the Course will be cross listed, please identify below what the course listed courses are:

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Current Credit Hours:* 3

Proposed Credit Change

If the course designator or course number is being changed, please list any courses for which this course is a prerequisite:

When will this course typically be offered ☐ Fall ☑ Summer ☐ Spring ☐ Alternating ☐ Variable

Can this course be repeated for credit? ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.

☐ Distance Synchronous Learning ☐ Hybrid/Blended ☐ Hyflex ☐ In-Person
☑ Online (Asynchronous)

COURSE RESOURCES

Does this course addition require additional department or institutional facilities, support and/or

○ Yes
◉ No

resources, or library subscriptions and resources?

If additional resources are needed, outline them below:

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*

- [x] Yes
- [ ] No

DSE - 510 - Data Science and Engineering Practicum

Graduate Course Modification Form - 2023/24 AY

General Catalog Information

Graduate Course Modification Form

Read before you begin

FILL IN all fields required marked with an * after importing data.

ATTACH supporting documentation.

LAUNCH *proposal by clicking Validate and Launch at the top. Once the proposal has been launched,* approve the proposal to move the proposal forward in the workflow.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

Faculty who are converting a course for online delivery, or making substantive changes to an existing course delivered online, are strongly encouraged to work with the Center for Innovation in Teaching and Learning (CITL) on those modifications: https://umaine.edu/citl/instructional-design-2/

REASON FOR COURSE MODIFICATION:* The Data Science and Engineering program now has its own programming course and the prerequisites for DSE 510 need to change to include this course so that students can self-enroll.

MODIFICATION:*
- ☐ Designator Change
- ☐ Credit Change
- ☐ Cross Listing
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☑ Prerequisite Change
- ☐ Addition of Electronic Learning Component*
- ☐ Conversion of an existing on-site Course to an online Course*

Department* Data Science & Engineering

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

CATALOG DESCRIPTION:

Current Course Designator*	DSE
Current Course #*	510
Proposed Course Designator	
Proposed Course #	
Current Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters).*	Data Science Practicum
Proposed New Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters)	
Current Long Course Title*	Data Science and Engineering Practicum
Proposed Long Course Title	
Current Course Description*	This course provides an introduction of tools and methods used to explore, visualize, and analyze data. It covers practical steps in preparing data for analysis including data cleaning, preprocessing, and data reduction, data structures for supporting efficient data exploration and analysis and visualization methods for gaining insights from data. Students will gain knowledge and experience through applying data science tools and methods to real world data sets. The course will be taught using Python ecosystems of tools that support data science including: NumPy, Pandas, Matplotlib, and SciPy, among others.
Proposed Course Description	
Current Prerequisite(s)	SIE 507 or permission
Proposed Prerequisite(s)	DSE502, SIE 507 or instructor permission

Current Corequisite(s)

Proposed Corequisite(s)

If the Course will be cross listed, please identify below what the course listed courses are:

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Current Credit Hours:* 3

Proposed Credit Change

If the course designator or course number is being changed, please list any courses for which this course is a prerequisite:

When will this course typically be offered ☐ Fall ☐ Summer ☑ Spring ☐ Alternating ☐ Variable

Can this course be repeated for credit? ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.

☐ Distance Synchronous Learning ☐ Hybrid/Blended ☐ Hyflex ☐ In-Person
☑ Online (Asynchronous)

COURSE RESOURCES

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources?

- ( ) Yes
- (•) No

If additional resources are needed, outline them below:

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*

- [ ] Yes
- [x] No

NUR - 644 - Healthcare Leadership and Management

Graduate Course Modification Form - 2023/24 AY

General Catalog Information

Graduate Course Modification Form

Read before you begin

FILL IN all fields required marked with an * after importing data.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

*Faculty who are converting a course for online delivery, or making substantive changes to an existing course delivered online, are strongly encouraged to work with the Center for Innovation in Teaching and Learning (CITL) on those modifications: https://umaine.edu/citl/instructional-design-2/

REASON FOR COURSE MODIFICATION:* The UMaine School of Nursing must align its Master of Science in Nursing degree programs with new national accreditation standards and expectations set forth by our accreditors, the Commission on Collegiate Nursing Education (CCNE), no later than 2025. Adopting a new teaching and learning framework focused on competency-based education (CBE) and assessment is necessary to meet the new curriculum guidelines fully. This name change reflects these new essentials for accrediation standards.

MODIFICATION:* ☐ Designator Change ☐ Credit Change ☐ Cross Listing ☐ Number Change ☑ Title Change
☑ Description Change ☐ Prerequisite Change ☐ Addition of Electronic Learning Component*
☐ Conversion of an existing on-site Course to an online Course*

Department* School of Nursing

EFFECTIVE SEMESTER:

Semester* Fall **Year*** 2024

CATALOG DESCRIPTION:

Current Course Designator* NUR **Current Course #*** 644

Proposed Course Designator NUR

Proposed Course # 644

Current Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 Healthcare Leadership and Mana

characters).*

Proposed New Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters) Interprof Leader Healthcare

Current Long Course Title* Healthcare Leadership and Management

Proposed Long Course Title Interprofessional Leadership in Healthcare

Current Course Description*

This course presents information about leadership and management within the dynamic environment of healthcare and offers students the opportunity to explore key concepts critical to successful healthcare leadership and management. Students examine how leadership/mana models/approaches influence outcomes within the direct care environment as well as more broader environments such as the clinical team department, professional workload, organization, community and their profession. Through case studies, online discussion groups, literatu review, and self-assessment/reflection, this course helps to better prepare students for their leadership role as a healthcare professional.

Proposed Course Description

This course analyzes and addresses the theoretical and conceptual leadership/management models and key concepts for success in the dynamic environment of healthcare. Key topics include outcome measures, quality improvement, healthcare finance, employee/customer engagement, and effective communication. Students examine how leadership and management models/approaches influence outcomes within the direct care environment as well as broader environments such as the clinical team, department, professional workload, organization, community and their profession. Through case studies, online discussion groups, literature review, self assessment/reflection and a leadership activity, this course helps to better prepare students for their leadership role as a healthcare professional.

Current Prerequisite(s) n/a

Proposed Prerequisite(s) n/a

Current Corequisite(s) n/a

Proposed Corequisite(s) n/a

If the Course will be cross listed, please identify below what the course listed courses are: n/a

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Current Credit Hours:* 3

Proposed Credit Change 3

If the course designator or course number is being changed, please list any courses for which this course is a prerequisite: n/a

When will this course typically be offered ☑ Fall ☐ Summer ☐ Spring ☐ Alternating ☐ Variable

Can this course be repeated for credit? ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation. ☐ Distance Synchronous Learning ☐ Hybrid/Blended ☐ Hyflex ☐ In-Person ☐ Online (Asynchronous)

COURSE RESOURCES

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources? ○ Yes ◉ No

If additional resources are needed, outline them below:

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?* ☐ Yes ☑ No

SIE - 505 - Formal Foundations for Information Science

Graduate Course Modification Form - 2023/24 AY

General Catalog Information

Graduate Course Modification Form

Read before you begin

FILL IN all fields required marked with an * after importing data.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

*Faculty who are converting a course for online delivery, or making substantive changes to an existing course delivered online, are strongly encouraged to work with the Center for Innovation in Teaching and Learning (CITL) on those modifications: https://umaine.edu/citl/instructional-design-2/

REASON FOR COURSE MODIFICATION:* The instructor proposes a small change in the course description.

MODIFICATION:*
- ☐ Designator Change
- ☐ Credit Change
- ☐ Cross Listing
- ☐ Number Change
- ☐ Title Change
- ☑ Description Change
- ☐ Prerequisite Change
- ☐ Addition of Electronic Learning Component*
- ☐ Conversion of an existing on-site Course to an online Course*

Department* School of Computing and Information Science

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

CATALOG DESCRIPTION:

Current Course Designator*	SIE
Current Course #*	505
Proposed Course Designator	SIE
Proposed Course #	505
Current Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters).*	Formal Foundations for Informa
Proposed New Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters)	Formal Foundations for Informa
Current Long Course Title*	Formal Foundations for Information Science
Proposed Long Course Title	**Formal Foundations for Information Science**
Current Course Description*	Increases student's understanding of the approach to information systems and science by formalisms. Draws on mathematics to increase familiarity with formal syntax and language, develops understanding and technical ability in handling structures relevant to information systems and science. Includes fundamental material on set theory, functions and relations, graph theory, and logic; examines a variety of algebraic structures; discusses formal languages and the bases of computation.
Proposed Course Description	Increases student's understanding of the approach to information systems and science by formalisms. Draws on mathematics to increase familiarity with formal syntax and language, develops understanding and technical ability in handling structures relevant to information systems and science. Includes fundamental material on set theory, functions and relations, graph theory, and **propositional and first-order** logic; examines a variety of algebraic structures; discusses formal languages and the bases of computation.
Current Prerequisite(s)	SIE 550 or instructor permission

Proposed Prerequisite(s)	SIE 550 or instructor permission
Current Corequisite(s)	
Proposed Corequisite(s)	
If the Course will be cross listed, please identify below what the course listed courses are:	N/A

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Current Credit Hours:*	3
Proposed Credit Change	3
If the course designator or course number is being changed, please list any courses for which this course is a prerequisite:	N/A

When will this course typically be offered ☑ Fall ☐ Summer ☐ Spring ☐ Alternating ☐ Variable

Can this course be repeated for credit? ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.

☐ Distance Synchronous Learning ☑ Hybrid/Blended ☐ Hyflex ☐ In-Person
☐ Online (Asynchronous)

COURSE RESOURCES

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources?

- ( ) Yes
- (•) No

If additional resources are needed, outline them below:

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*

- [ ] Yes
- [x] No

SIE - 516 - Interactive Technologies for Solving Real-World Problems

Graduate Course Modification Form - 2023/24 AY

General Catalog Information

Graduate Course Modification Form

Read before you begin

FILL IN all fields required marked with an * after importing data.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

***Faculty who are converting a course for online delivery, or making substantive changes to an existing course delivered online, are strongly encouraged to work with the Center for Innovation in Teaching and Learning (CITL) on those modifications: https://umaine.edu/citl/instructional-design-2/**

REASON FOR COURSE MODIFICATION:* Instructor requires more programming background for how the material is taught.

MODIFICATION:*
- ☐ Designator Change
- ☐ Credit Change
- ☐ Cross Listing
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☑ Prerequisite Change
- ☐ Addition of Electronic Learning Component*
- ☐ Conversion of an existing on-site Course to an online Course*

Department* School of Computing and Information Science

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

CATALOG DESCRIPTION:

Current Course Designator*	SIE
Current Course #*	516
Proposed Course Designator	SIE
Proposed Course #	516
Current Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters).*	Interactive Technologies
Proposed New Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters)	Interactive Technologies
Current Long Course Title*	Interactive Technologies for Solving Real-World Problems
Proposed Long Course Title	Interactive Technologies for Solving Real-World Problems
Current Course Description*	This course is designed to provide students with an overview of the basic principles of interactive design and immersive technology (virtual, augmented, mixed, and extended reality). The goal is to learn enough about the strengths and limitations of this technology, and the associated human factors, to design simple prototypes aimed at solving real-world problems.
Proposed Course Description	This course is designed to provide students with an overview of the basic principles of interactive design and immersive technology (virtual, augmented, mixed, and extended reality). The goal is to learn enough about the strengths and limitations of this technology, and the associated human factors, to design simple prototypes aimed at solving real-world problems.
Current Prerequisite(s)	Programming experience and graduate standing or permission
Proposed Prerequisite(s)	SIE 507, graduate standing or instructor permission.
Current	

Corequisite(s)

Proposed Corequisite(s)

If the Course will be cross listed, please identify below what the course listed courses are:

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Current Credit Hours:* 3

Proposed Credit Change N/A

If the course designator or course number is being changed, please list any courses for which this course is a prerequisite: N/A

When will this course typically be offered ☐ Fall ☐ Summer ☑ Spring ☐ Alternating ☐ Variable

Can this course be repeated for credit? ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.

☐ Distance Synchronous Learning ☑ Hybrid/Blended ☐ Hyflex ☐ In-Person
☐ Online (Asynchronous)

COURSE RESOURCES

Does this course addition require additional department or institutional facilities, support and/or

○ Yes
◉ No

resources, or library subscriptions and resources?

If additional resources are needed, outline them below:

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*

- [ ] Yes
- [x] No

SIE - 550 - Design of Information Systems

Graduate Course Modification Form - 2023/24 AY

General Catalog Information

Graduate Course Modification Form

Read before you begin

FILL IN all fields required marked with an * after importing data.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

***Faculty who are converting a course for online delivery, or making substantive changes to an existing course delivered online, are strongly encouraged to work with the Center for Innovation in Teaching and Learning (CITL) on those modifications: https://umaine.edu/citl/instructional-design-2/**

REASON FOR COURSE MODIFICATION:* Instructor who has taught the course before has retired in 2023. The new instructor slightly modified the content of the course. Therefore, it needs a new description going forward.

MODIFICATION:*

- ☐ Designator Change
- ☐ Credit Change
- ☐ Cross Listing
- ☐ Number Change
- ☐ Title Change
- ☑ Description Change
- ☐ Prerequisite Change
- ☐ Addition of Electronic Learning Component*
- ☐ Conversion of an existing on-site Course to an online Course*

Department* School of Computing and Information Science

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

CATALOG DESCRIPTION:

Current Course Designator*	SIE
Current Course #*	550
Proposed Course Designator	SIE
Proposed Course #	550
Current Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters).*	Design of Information Systems
Proposed New Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters)	Design of Information Systems
Current Long Course Title*	Design of Information Systems
Proposed Long Course Title	Design of Information Systems
Current Course Description*	Cognitive and theoretical foundation for representation of knowledge in information systems and fundamental concepts necessary to design and implement information systems. Logic programming as a tool for fast design and prototyping of data models. Formal languages and formal models, conceptual modeling techniques, methods for data abstraction, object-oriented modeling and database schema design. Relational data model and database query languages, including SQL.
Proposed Course Description	Modeling and abstraction techniques for designing, sharing and implementing information systems. Includes models of the functionality, architecture and the information stored in an information system. Introduces procedural and declarative paradigms to represent and process data information and knowledge. Covers conceptual modeling using entity-relationship models, UML models, query languages (SQL), logic and formal languages.
Current Prerequisite(s)	Prerequisites: Graduate standing or permission of instructor. Credits: 3

Proposed Prerequisite(s)	Prerequisites: SIE 507 or other basic programming experience.
Current Corequisite(s)	
Proposed Corequisite(s)	
If the Course will be cross listed, please identify below what the course listed courses are:	

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Current Credit Hours:*	3
Proposed Credit Change	None
If the course designator or course number is being changed, please list any courses for which this course is a prerequisite:	n/a

When will this course typically be offered ☐ Fall ☐ Summer ☑ Spring ☐ Alternating ☐ Variable

Can this course be repeated for credit? ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.

☐ Distance Synchronous Learning ☑ Hybrid/Blended ☐ Hyflex ☐ In-Person
☐ Online (Asynchronous)

COURSE RESOURCES

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources?

- ( ) Yes
- (•) No

If additional resources are needed, outline them below:

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*

- [ ] Yes
- [x] No

SIE - 555 - Spatial Database Systems

Graduate Course Modification Form - 2023/24 AY

General Catalog Information

Graduate Course Modification Form

Read before you begin

FILL IN all fields required marked with an * after importing data.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

***Faculty who are converting a course for online delivery, or making substantive changes to an existing course delivered online, are strongly encouraged to work with the Center for Innovation in Teaching and Learning (CITL) on those modifications: https://umaine.edu/citl/instructional-design-2/**

REASON FOR COURSE MODIFICATION:* Course material has slightly changed and the course needs a new description.

MODIFICATION:*
- ☐ Designator Change
- ☐ Credit Change
- ☐ Cross Listing
- ☐ Number Change
- ☐ Title Change
- ☑ Description Change
- ☑ Prerequisite Change
- ☐ Addition of Electronic Learning Component*
- ☐ Conversion of an existing on-site Course to an online Course*

Department* School of Computing and Information Science

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

CATALOG DESCRIPTION:

Current Course Designator*	SIE
Current Course #*	555
Proposed Course Designator	SIE
Proposed Course #	555
Current Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters).*	Spatial Database Systems
Proposed New Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters)	Spatial Database Systems
Current Long Course Title*	Spatial Database Systems
Proposed Long Course Title	Spatial Database Systems
Current Course Description*	Covers internal system aspects of spatial database systems. Layered database architecture. Physical data independence. Spatial data models. Storage hierarchy. File organization. Spatial index structures. Spatial query processing and optimization. Transaction management and crash recovery. Commercial spatial database systems.
Proposed Course Description	This course introduces the theory and practice of spatial database management system (SDBMS). A SDBMS has a data model and query language to structure and query spatial data collections, and shield users from implementation and execution details. The course introduces the relational algebra, SQL, spatial extensions to the relational algebra and the OGC-based Spatial Extension to SQL. The course investigates the efficient query processing of spatial data. This includes spatial index structures, the implementation of spatial operators, and the processing and optimization of spatial query consisting of a set of spatial operators. The course balances academic principles with practical problems and the use of open-source spatial database systems such as PostGIS and QGIS.
Current Prerequisite(s)	Programming experience and graduate standing or instructor permission.

Proposed Prerequisite(s)	SIE507 or instructor permission.
Current Corequisite(s)	
Proposed Corequisite(s)	
If the Course will be cross listed, please identify below what the course listed courses are:	

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Current Credit Hours:*	3
Proposed Credit Change	3
If the course designator or course number is being changed, please list any courses for which this course is a prerequisite:	

When will this course typically be offered ☑ Fall ☐ Summer ☐ Spring ☐ Alternating ☐ Variable

Can this course be repeated for credit? ○ Yes ◉ No

If YES, total number of credits allowed: **If YES, total number of completions allowed:**

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.

☐ Distance Synchronous Learning ☑ Hybrid/Blended ☐ Hyflex ☐ In-Person
☐ Online (Asynchronous)

COURSE RESOURCES

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources?

- ( ) Yes
- (•) No

If additional resources are needed, outline them below:

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*

- [ ] Yes
- [x] No

SIE - 558 - Real-time Sensor Data Streams

Graduate Course Modification Form - 2023/24 AY

General Catalog Information

Graduate Course Modification Form

Read before you begin

FILL IN all fields required marked with an * after importing data.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

***Faculty who are converting a course for online delivery, or making substantive changes to an existing course delivered online, are strongly encouraged to work with the Center for Innovation in Teaching and Learning (CITL) on those modifications: https://umaine.edu/citl/instructional-design-2/**

REASON FOR COURSE MODIFICATION:* Course only requires Python as prerequisite, not Java or C++.

MODIFICATION:*
- ☐ Designator Change
- ☐ Credit Change
- ☐ Cross Listing
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☑ Prerequisite Change
- ☐ Addition of Electronic Learning Component*
- ☐ Conversion of an existing on-site Course to an online Course*

Department* School of Computing and Information Science

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

CATALOG DESCRIPTION:

Current Course Designator*	SIE
Current Course #*	558
Proposed Course Designator	SIE
Proposed Course #	558
Current Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters).*	Real-time Sensor Data Streams
Proposed New Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters)	Real-time Sensor Data Streams
Current Long Course Title*	Real-time Sensor Data Streams
Proposed Long Course Title	Real-time Sensor Data Streams
Current Course Description*	This course is an introduction into the technology of sensor data stream management. This data management technology is driven by computing through sensors and other smart devices that are embedded in the environment and attached to the Internet, constantly streaming sensed information. With streams everywhere, Data Stream Engines (DSE) have emerged aiming to provide generic software technology similar to that of database systems for analyzing streaming data with simple queries in real-time. Sensor streams are ultimately stored in databases and analyzed using scalable cloud technologies.
Proposed Course Description	This course is an introduction into the technology of sensor data stream management. This data management technology is driven by computing through sensors and other smart devices that are embedded in the environment and attached to the Internet, constantly streaming sensed information. With streams everywhere, Data Stream Engines (DSE) have emerged aiming to provide generic software technology similar to that of database systems for analyzing streaming data with simple queries in real-time. Sensor streams are ultimately stored in databases and analyzed using scalable cloud technologies.
Current	Programming experience in Java, C++ or C or permission of the instructor

Prerequisite(s)	Programming experience in Java, C++ or C or permission of the instructor.
Proposed Prerequisite(s)	SIE 507 or instructor permission
Current Corequisite(s)	
Proposed Corequisite(s)	
If the Course will be cross listed, please identify below what the course listed courses are:	

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Current Credit Hours:*	3
Proposed Credit Change	3
If the course designator or course number is being changed, please list any courses for which this course is a prerequisite:	n/a

When will this course typically be offered ☑ Fall ☐ Summer ☐ Spring ☐ Alternating ☐ Variable

Can this course be repeated for credit? ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.

☐ Distance Synchronous Learning ☑ Hybrid/Blended ☐ Hyflex ☐ In-Person
☐ Online (Asynchronous)

COURSE RESOURCES

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources?

- ( ) Yes
- (•) No

If additional resources are needed, outline them below:

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*

- [ ] Yes
- [x] No

SIE - 559 - Geosensor Networks

Graduate Course Modification Form - 2023/24 AY

General Catalog Information

Graduate Course Modification Form

Read before you begin

FILL IN all fields required marked with an * after importing data.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

*Faculty who are converting a course for online delivery, or making substantive changes to an existing course delivered online, are strongly encouraged to work with the Center for Innovation in Teaching and Learning (CITL) on those modifications: https://umaine.edu/citl/instructional-design-2/

REASON FOR COURSE MODIFICATION:* Course only needs the programming language Python as prerequisite, not C++ or Java.

MODIFICATION:*
- ☐ Designator Change
- ☐ Credit Change
- ☐ Cross Listing
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☑ Prerequisite Change
- ☐ Addition of Electronic Learning Component*
- ☐ Conversion of an existing on-site Course to an online Course*

Department* School of Computing and Information Science

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

CATALOG DESCRIPTION:

Current Course Designator*	SIE
Current Course #*	559
Proposed Course Designator	
Proposed Course #	
Current Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters).*	Geosensor Networks
Proposed New Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters)	
Current Long Course Title*	Geosensor Networks
Proposed Long Course Title	
Current Course Description*	Readily available technology of ubiquitous wireless communication networks, the miniaturization of computing and storage platforms as well as the development of novel microsensors and sensor materials has led to the technology of wireless geosensor networks (GSN). Geosensor networks have changed the type of dynamic environmental phenomena that can be detected, monitored and reacted to, often in real-time. In this course, we will survey the field of wireless geosensor networks, and explore the state of the art in technology and algorithms to achieve energy-efficient, robust and decentralized spatial computing.
Proposed Course Description	
Current Prerequisite(s)	Programming experience in Java, C++ or C or permission of the instructor
Proposed Prerequisite(s)	SIE 507 or instructor permission
Current Corequisite(s)	

Proposed Corequisite(s)

If the Course will be cross listed, please identify below what the course listed courses are:

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Current Credit Hours:* 3

Proposed Credit Change

If the course designator or course number is being changed, please list any courses for which this course is a prerequisite:

When will this course typically be offered ☑ Fall ☐ Summer ☐ Spring ☐ Alternating ☐ Variable

Can this course be repeated for credit? ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.

☐ Distance Synchronous Learning ☑ Hybrid/Blended ☐ Hyflex ☐ In-Person
☐ Online (Asynchronous)

COURSE RESOURCES

Does this course addition require additional department or institutional facilities, support and/or

○ Yes
◉ No

resources, or library subscriptions and resources?

If additional resources are needed, outline them below:

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*

- [ ] Yes
- [x] No

SIE - 580 - Ontology Engineering Theory and Practice

Graduate Course Modification Form - 2023/24 AY

General Catalog Information

Graduate Course Modification Form

Read before you begin

FILL IN all fields required marked with an * after importing data.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

***Faculty who are converting a course for online delivery, or making substantive changes to an existing course delivered online, are strongly encouraged to work with the Center for Innovation in Teaching and Learning (CITL) on those modifications: https://umaine.edu/citl/instructional-design-2/**

REASON FOR COURSE MODIFICATION:* The prerequisite of the course changes from SIE505 to SIE550 since in the future both courses (SIE505 and SIE580) can be taken alternatively to fulfill the MSIS program's requirements.

MODIFICATION:*
- ☐ Designator Change
- ☐ Credit Change
- ☐ Cross Listing
- ☐ Number Change
- ☐ Title Change
- ☐ Description Change
- ☑ Prerequisite Change
- ☐ Addition of Electronic Learning Component*
- ☐ Conversion of an existing on-site Course to an online Course*

Department* School of Computing and Information Science

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

CATALOG DESCRIPTION:

Current Course Designator*	SIE
Current Course #*	580
Proposed Course Designator	N/A
Proposed Course #	N/A
Current Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters).*	Ontology Engineering
Proposed New Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters)	
Current Long Course Title*	Ontology Engineering Theory and Practice
Proposed Long Course Title	
Current Course Description*	Ontologies are explicit specifications of information models and their semantics in formats that are interpretable by humans and computers. This course introduces the philosophical and logical foundations of ontologies and surveys formalisms, modern languages and methods for designing, analyzing and using ontologies. The stages of ontology development from conceptual design to ontology evaluation and verification are studied and practiced using concrete domains.
Proposed Course Description	
Current Prerequisite(s)	SIE 505 or instructor permission
Proposed Prerequisite(s)	SIE 550 or instructor permission
Current Corequisite(s)	

Proposed Corequisite(s)

If the Course will be cross listed, please identify below what the course listed courses are: N/A

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Current Credit Hours:* 3

Proposed Credit Change N/A

If the course designator or course number is being changed, please list any courses for which this course is a prerequisite: N/A

When will this course typically be offered ☑ Fall ☐ Summer ☐ Spring ☐ Alternating ☐ Variable

Can this course be repeated for credit? ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.

☐ Distance Synchronous Learning ☑ Hybrid/Blended ☐ Hyflex ☐ In-Person
☐ Online (Asynchronous)

COURSE RESOURCES

Does this course addition require additional department or institutional facilities, support and/or

○ Yes
◉ No

resources, or library subscriptions and resources?

If additional resources are needed, outline them below:

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?*

- [ ] Yes
- [x] No

SWK - 595 - Field Practicum in Social Work

Graduate Course Modification Form - 2023/24 AY

General Catalog Information

Graduate Course Modification Form

Read before you begin

FILL IN all fields required marked with an * after importing data.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

***Faculty who are converting a course for online delivery, or making substantive changes to an existing course delivered online, are strongly encouraged to work with the Center for Innovation in Teaching and Learning (CITL) on those modifications: https://umaine.edu/citl/instructional-design-2/**

REASON FOR COURSE MODIFICATION:*

The School of Social Work will be substituting the current word "field" (referrring to practicum) for "internship" throughout our program. This decision was made as the term "field" has racist connotations for some (e.g., field work). This is a decision that has been made by a number of Social Work Schools throughout the country.

This course covers two semesters (part 1 and part 2). It is taught in person in our on-campus MSW program in the fall and spring, and synchronously with two in-person meetings in our online-blended MSW program in the summer and fall. (DLL supports the onine-blended MSW program.)

MODIFICATION:*

- ☐ Designator Change
- ☐ Credit Change
- ☐ Cross Listing
- ☐ Number Change
- ☑ Title Change
- ☐ Description Change
- ☐ Prerequisite Change
- ☐ Addition of Electronic Learning Component*
- ☐ Conversion of an existing on-site Course to an online Course*

Department*

Department School of Social Work

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

CATALOG DESCRIPTION:

Current Course Designator* SWK

Current Course #* 595

Proposed Course Designator SWK

Proposed Course # 595

Current Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters).* Field Practicum in Social Work

Proposed New Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters) MSW Generalist Internship

Current Long Course Title* Field Practicum in Social Work

Proposed Long Course Title MSW Generalist Internship

Current Course Description* Supervised generalist social work practice in community agencies provides opportunities to apply social work knowledge and skills toward planned intervention and change efforts.

Proposed Course Description	Supervised generalist social work practice in community agencies provides opportunities to apply social work knowledge and skills toward planned intervention and change efforts.
Current Prerequisite(s)	**Prerequisites & Notes** MSW student
Proposed Prerequisite(s)	**Prerequisites & Notes** MSW student
Current Corequisite(s)	SWK 560 with SWK 595 part 1 SWK 563 with SWK 595 part 2
Proposed Corequisite(s)	SWK 560 with SWK 595 part 1 SWK 563 with SWK 595 part 2
If the Course will be cross listed, please identify below what the course listed courses are:	

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Current Credit Hours:*	4
Proposed Credit Change	4-no change
If the course designator or course number is being changed, please list any courses for which this course is a prerequisite:	
When will this course typically be offered	☑ Fall ☑ Summer ☑ Spring ☐ Alternating ☐ Variable

Typically be offered

Can this course be repeated for credit? ○ Yes ◉ No

If YES, total number of credits allowed:

If YES, total number of completions allowed:

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.

☑ Distance Synchronous Learning
☐ Online (Asynchronous)
☑ Hybrid/Blended
☐ Hyflex
☑ In-Person

COURSE RESOURCES

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources? ○ Yes ◉ No

If additional resources are needed, outline them below:

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?* ☑ Yes ☐ No

SWK - 695 - Advanced Field Practicum in Social Work

Graduate Course Modification Form - 2023/24 AY

General Catalog Information

Graduate Course Modification Form

Read before you begin

FILL IN all fields required marked with an * after importing data.

ATTACH supporting documentation.

LAUNCH proposal by clicking Validate and Launch at the top. Once the proposal has been launched, approve the proposal to move the proposal forward in the workflow.

For assistance in completing this form or if you have any questions, email um.catalog@maine.edu.

***Faculty who are converting a course for online delivery, or making substantive changes to an existing course delivered online, are strongly encouraged to work with the Center for Innovation in Teaching and Learning (CITL) on those modifications: https://umaine.edu/citl/instructional-design-2/**

REASON FOR COURSE MODIFICATION:* The School of Social Work will be substituting the current word "field" (referrring to practicum) for "internship" throughout our program. This decision was made as the term "field" has racist connotations for some (e.g., field work). This is a decision that has been made by a number of Social Work Schools throughout the country.

SWK 695 is a two-semester course (part 1 and part 2). It is taught in person in our in-person MSW program in the fall and the spring, and as an synchronous class with two in-person meetings in our online-blended MSW program, also in the fall and spring. The course is also taught in two sessions over the summer as a synchronous class.

MODIFICATION:* ☐ Designator Change ☐ Credit Change ☐ Cross Listing ☐ Number Change
☑ Title Change ☐ Description Change ☐ Prerequisite Change
☐ Addition of Electronic Learning Component*
☐ Conversion of an existing on-site Course to an online Course*

Department* School of Social Work

EFFECTIVE SEMESTER:

Semester* Fall

Year* 2024

CATALOG DESCRIPTION:

Current Course Designator* SWK

Current Course #* 695

Proposed Course Designator SWK

Proposed Course # 695

Current Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters).* Advanced Field Practicum

Proposed New Short Course Title (The short course title will reflect on the Class Section in MaineStreet and on the student's transcript. Max 30 characters) MSW Specialization Internship

Current Long Course Title* Advanced Field Practicum in Social Work

Proposed Long Course Title MSW Specialization Internship

Current Course Description* Advanced generalist social work practice in community agencies. Provides students the opportunity to apply advanced social work knowledge and skills directed toward planned intervention and change efforts.

Proposed Course Description	Specialization year social work practice in community agencies. Provides students the opportunity to apply advanced social work knowledge and skills directed toward planned intervention and change efforts.
Current Prerequisite(s)	SWK 595 or SWK 531
Proposed Prerequisite(s)	SWK 595 or SWK 531
Current Corequisite(s)	
Proposed Corequisite(s)	
If the Course will be cross listed, please identify below what the course listed courses are:	

Definition of Credit Hours: Go to https://umaine.edu/graduate/students/progress/enroll/#define-credit-hour for the definition of a credit hour at UMaine.

Current Credit Hours:*	1-5
Proposed Credit Change	5
If the course designator or course number is being changed, please list any courses for which this course is a prerequisite:	
When will this course typically be offered	☑ Fall ☑ Summer ☑ Spring ☐ Alternating ☐ Variable
Can this course be repeated for credit?	○ Yes ◉ No
If YES, total number	**If YES, total number**

of credits allowed:

of completions allowed:

Can students enroll multiple times in term? ○ Yes ◉ No

Instruction Mode: Select the mode of instruction for this course. Review the instruction modes documentation provided by UMS. https://gojira.its.maine.edu/confluence/display/DARTS/Instruction+Modes+Documentation.

☑ Distance Synchronous Learning ☑ Hybrid/Blended ☐ Hyflex ☑ In-Person
☐ Online (Asynchronous)

COURSE RESOURCES

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources? ○ Yes ◉ No

If additional resources are needed, outline them below:

Will instructional cost for this course proposal involve financial support from the Division of Life Long learning?* ☑ Yes ☐ No