CURRICULUM COMMITTEE REPORT

The Curriculum Committee met on April 5th, 2022 and is recommending the following courses to the Graduate Board for approval at its April 21st meeting.

New Courses:

BIO 500 Biological Inquiry and Analysis

EHD 511 Classroom-based Prevention and Intervention

ESC 552 Teaching Science in Secondary Schools

MEE 520 Nanomaterials and Nanomechanics

Modifications:

CMJ 515 Mass Communication Theory

FSN 586 Sensory Evaluation II

FSN 603 Nutrient Changes in the Food System

SED 505 Diversity of Development in Childhood

SEI 524 Supporting Play and Social-Emotional Development of Infants and Young Children

THE UNIVERSITY OF MAINE
Graduate School

5775 Stodder Hall
Orono, Maine 04469-5775
umaine.edu/graduate
graduate@maine.edu
207.581.3291

New Graduate Course Proposal

Academic Unit: Biology & Ecology

Course Designator & Number: BIO 500 **Effective Semester:** Fall 2022

Course Title: Biological Inquiry and Analysis

Course Type: New Course

Proposed Catalog Description:
This course provides an overview of the broad field of biology, including: foundational topics and research frontiers, interests and perspectives of UMaine faculty, the structure of graduate study in the School of Biology and Ecology, (SBE) research facilities and opportunities. Required for graduate students in SBE.

Course Prerequisites: Matriculation in a graduate program at the University of Maine.

Credit Hours: 2 **Component:** Seminar

Cross-Listed Course:

Text(s) Planned for Use:
Primary literature readings (accessible review papers), book chapters, and/or high-level popular articles selected by faculty hosts each week.

Course Instructor: Matthew Chatfield

Reason for new course:
This course will be a required component of SBE's revamped graduate programs, which are being consolidated to a single MS and PhD in Biological Sciences, as well as our revised Entomology MS. This course was designed to be a precursor and complement to BIO 505: Professionalism in Biology. Partly in response to graduate student feedback, this course has been designed to 1) provide an overview of the diverse expertise in our large unit, 2) facilitate student cohorts and cohesion across disciplines, and 3) provide awareness of our programs and facilities.

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources?

No. The academic unit will not request additional resources for this course

Additional Resources:

None

Academic Units Affected (if any):
To our knowledge, there are no conflicts with other units. The closest to a conflict is EES, which does not have any requirements whatsoever, and many EES students end up taking BIO 505; this proposed course will be open to all, and we suspect we may get other students with SBE faculty who enroll.

Course Frequency: Every fall. We anticipate no overload salary payments, though the instructor has not yet been designated by our Director. Because this course must be in review in order for our program change form to be reviewed, I was instructed to submit it without a designated instructor.

Can this course be repeated for credit? No

Total number of credits allowed: 2

Total number of completions allowed: 1

Can students enroll multiple times in a term? No

Mode of Instruction: In-Person

Endorsements

Leader: farahad.dastoor@maine.edu Approved **Date:** 02/09/22

College CC Chair: _____ _____ **Date:** _____

College Dean: susans@maine.edu Approved **Date:** 02/23/22

Leader: _____ _____ **Date:** _____

College CC Chair: _____ _____ **Date:** _____

College Dean: _____ _____ **Date:** _____

DLL: _____ _____ **Date:** _____

_____

Graduate School **Date**

BIOLOGICAL INQUIRY & ANALYSIS

BIO 500 – FALL 2022

Location: TBD

Date/Time: TBD

Instructor: Matt Chatfield, Office Hours TBD

Credits: 2

Prerequisite: Enrollment in a graduate program.

Course Description: This course provides an overview of the broad field of biology, including: foundational topics and research frontiers, interests and perspectives of UMaine faculty, the structure of graduate study in the School of Biology and Ecology, research facilities and opportunities. Required for graduate students in SBE.

The **Biological Sciences** are a broad and diverse field devoted to understanding life on earth from the mechanisms at the cellular level to the biodiversity patterns of the entire globe. The School of Biology and Ecology is similarly broad and diverse, encompassing research from muscle disorders to forest insect pests. Linking these seemingly disparate topics are the unifying themes of diversity, interdependence, and evolution. Our sub-fields are interconnected, but we also have much to learn and share about one another's theories and methods. The goal of this course is to provide a broad foundation in biological inquiry to incoming graduate students, and to build awareness of emerging questions. Our aim is to not only provide an overview of the subject of biology, but to build strong graduate cohorts and set students up for success in their programs and research.

Readings: Course reading will consist of primary journal articles (accessible review papers), book chapters, and/or high-level popular science articles, as assigned by visiting faculty instructors. Readings will be emailed each week or posted to Google Classroom.

Goals & Outcomes

This course provides an overview of the broad and diverse field of **Biological Sciences**, through the lens of faculty research at the University of Maine. After taking this course, students will be able to:

- Demonstrate a strong foundation of the major themes and emerging questions in biological research across the subdisciplines through oral and written communication.

- Represent the breadth of expertise of SBE faculty through oral and written communication, and identify potential faculty committee members who can assist with their research and scholarship

- Apply knowledge about the requirements of our graduate programs in the development of their programs of study and graduate timelines.

- Communicate the breadth of research facilities, training opportunities, and resources at the University of Maine, and apply relevant resources to their own graduate research.

- Demonstrate, orally and in writing, the ability to draw connections among the disciplines of the biological sciences as applied to their own research interests and goals.

- Demonstrate, in writing, an ability to integrate and synthesize information from presentations and evaluate speakers' effectiveness in communicating to a broad audience.

Course Logistics

Each week will consist of 1) A discussion of readings selected by that week's faculty guests (1 hour), 2) a site tour or presentation of a campus lab, research facility, or other resource (30 min), and 3) attending the weekly SBE departmental seminar and submitting a written assessment (1 hr).

Grades & Assessments

1) Participation in class discussions (50%). Each week, we will return to several touchstone questions, to build transdisciplinary connections. Students will be assessed on their demonstration that they read the readings, their active participation in discussion, and their demonstrated ability, through small and large group discussion, to make connections between the week's readings and their own areas of interest.

    Touchstone questions:

    a) What has this field (i.e., the topic of the week) contributed to general biology (or other subdisciplines of biology)?
    b) What are the most pressing questions in this field?
    c) How can other biology subdisciplines help address those pressing questions?
    d) What can you bring to your field from this discipline?
    e) What tools/concepts in this field are cross-applicable with your own?

Discussion Participation Rubric

Component	Sophisticated	Competent	Not Yet Competent	Unacceptable
Conduct	Student shows respect for members of the class, both in speech and manner, and for the method of shared inquiry and peer discussion. Does not dominate discussion. Student challenges ideas respectfully, encourages and supports others to do the same.	Student shows respect for members of the class and for the method of shared inquiry and peer discussion. Participates regularly in the discussion but occasionally has difficulty accepting challenges to his/her ideas or maintaining respectful attitude when challenging others' ideas.	Student shows little respect for the class or the process as evidenced by speech and manner. Sometimes resorts to ad hominem attacks when in disagreement with others.	Student shows a lack of respect for members of the group and the discussion process. Often dominates the discussion or disengages from the process. When contributing, can be argumentative or dismissive of others' ideas, or resorts to ad hominem attacks.
Ownership/ Leadership	Takes responsibility for maintaining the flow and quality of the discussion whenever needed. Helps to redirect or refocus discussion when it becomes sidetracked or unproductive. Makes efforts to engage reluctant participants. Provides constructive feedback and support to others.	Will take on responsibility for maintaining flow and quality of discussion, and encouraging others to participate but either is not always effective or is effective but does not regularly take on the responsibility.	Rarely takes an active role in maintaining the flow or direction of the discussion. When put in a leadership role, often acts as a guard rather than a facilitator: constrains or biases the content and flow of the discussion.	Does not play an active role in maintaining the flow of discussion or undermines the efforts of others who are trying to facilitate discussion.

Reasoning	Arguments or positions are reasonable and supported with evidence from the readings. Often deepens the conversation by going beyond the text, recognizing implications and extensions of the text. Provides analysis of complex ideas that help deepen the inquiry and further the conversation.	Arguments or positions are reasonable and mostly supported by evidence from the readings. In general, the comments and ideas contribute to the group's understanding of the material and concepts.	Contributions to the discussion are more often based on opinion or unclear views than on reasoned arguments or positions based on the readings. Comments or questions suggest a difficulty in following complex lines of argument or student's arguments are convoluted and difficult to follow.	Comments are frequently so illogical or without substantiation that others are unable to critique or even follow them. Rather than critique the text the student may resort to ad hominem attacks on the author instead.
Listening	Always actively attends to what others say as evidenced by regularly building on, clarifying, or responding to their comments. Often reminds group of comments made by someone earlier that are pertinent.	Usually listens well and takes steps to check comprehension by asking clarifying and probing questions, and making connections to earlier comments. Responds to ideas and questions offered by other participants.	Does not regularly listen well as indicated by the repetition of comments or questions presented earlier, or frequent non sequiturs.	Behavior frequently reflects a failure to listen or attend to the discussion as indicated by repetition of comments and questions, non sequiturs, off-task activities.
Reading	Student has carefully read and understood the readings as evidenced by oral contributions; familiarity with main ideas, supporting evidence and secondary points. Comes to class prepared with questions and critiques of the readings.	Student has read and understood the readings as evidenced by oral contributions. The work demonstrates a grasp of the main ideas and evidence but sometimes interpretations are questionable. Comes prepared with questions.	Student has read the material, but comments often indicate that he/she didn't read or think carefully about it, or misunderstood or forgot many points. Class conduct suggests inconsistent commitment to preparation.	Student either is unable to adequately understand and interpret the material or has frequently come to class unprepared, as indicated by serious errors or an inability to answer basic questions or contribute to discussion.

2) Weekly written responses/assessments of SBE seminars (12/semester; 50% of your grade): Each week, students will attend the SBE seminar, and by the following week they will submit 2-page response that summarizes and evaluates the presentation, answering the following:

   a. What were the main objectives/questions/approaches of the presented work?

   b. What were the central findings?

   c. What subdisciplines of biology (or other fields) was this investigator applying?

   d. Evaluate this presentation: what worked? What didn't work?

Grading Scale:

Note: graduate students must receive a minimum of a "C" for courses to be considered towards graduate credit.

A	93-100	**C**	73-76
A-	90-92	**C-**	70-72
B+	87-89	**D+**	67-69
B	83-86	**D**	65-66
B-	80-82	**F**	<65
C+	77-79		

Course Schedule w/ Topics

Week	Topic	Faculty	Site Visit	Seminar
1	Intro & Welcome	Chair, Grad Coordinator	Tour w/SBE GO	TBD
2	Biodiversity	McGill, Rominger	Fogler Library w/science librarian	TBD
3	Community Ecology	Greig, Klemmer	Wheatland Lab	TBD
4	Evolution	Meireles, Olsen	IMRC	TBD
5	Climate Change	Gill, Saros	Climate Change Institute	TBD
6	One Health	Gardner, Chatfield	Maine Institute of Medicine	TBD
7	Ecophysiology	Levesque, New Hire	Small Animal Research Facility	TBD
8	Genetics	Tan, Alyokhin	DNA Sequencing Center	TBD

9	Cells & Dev Bio	Henry, Talbot	Zebrafish Labs/Hitchner Facilities	TBD
10	Neurobiology	Kass, New Hire	Electron Microscopy Lab	TBD
11	Plant Science	Zhang, Annis	Greenhouses	TBD
12	eDNA	Grey, Kinnison	eDNA Service Center/CGE	TBD
13	Applied Entomology	Fanning, Mech	MAFES/Field Stations	TBD
14	Teaching	McGuire, Dastoor	CITL, RiSE Center	TBD

Course Policies

1. **The ongoing COVID-19 pandemic** means we need to take extra care of one another: masking, as required by university policy, is an important tool that allows us to keep this class in-person. Please continue to wear your mask in class and in the vans; face coverings are not required outdoors. Please stay home if you feel sick or have had a COVID-19 exposure, and I will make every effort to accommodate you. For up-to-date information about University COVID-19 guidelines, please see: https://umaine.edu/return/

2. **Attendance & Timeliness:** Submitting assignments on time will result in a better, more enjoyable experience in this class. Sometimes, missing class or lab is necessary due to professional opportunities, weather, personal loss, illness, or acts of nature. My policy is to trust your judgment: if you must miss one or more class sessions, please let me know as soon as you are able. I'll work with you to provide opportunities to catch up on what you miss.

3. **Academic Honesty & Integrity:** 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.

4. **Accessibility & Accommodation:** 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 Prof. Chatfield privately as soon as possible.

5. **Course Schedule Disclaimer: I**n 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.

6. **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.

7. **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.

   f 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. Also, Student Wellness Resource Center.

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5775 Stodder Hall
Orono, Maine 04469-5775
umaine.edu/graduate
graduate@maine.edu
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New Graduate Course Proposal

Academic Unit: Learning & Teaching

Course Designator & Number: EHD 511 **Effective Semester:** Summer 2022

Course Title: Classroom-based Prevention & Intervention: Supporting Positive Behavior and Academic A

Course Type: New Course

Proposed Catalog Description:
This course examines the application of prevention and intervention theory and practice within classroom settings. Theoretical perspectives on risk and resilience as they pertain to the development of competent social behaviors, including those found to facilitate social relationships, serve as academic enablers, and promote self-determination will be addressed. Applied behavioral analysis, social learning theory, and the eco-behavioral framework will serve as the primary intellectual roots for this course. Particular emphasis will be given to creating a comprehensive classroom plan based on evidence-based practices and implemented within a cohesive system of behavioral and academic support and intervention. Contextual factors such as home, community, race, culture and SES, within the broader domain of social justice will provide the ecological backdrop of our study.

Course Prerequisites: Admission to the MAT program or instructor permission

Credit Hours: 3 **Component:** Lecture

Cross-Listed Course:

Text(s) Planned for Use:
No text required

Course Instructor: Courtney Angelosante, Lecturer in Special Education, 4/4

Reason for new course:
Required class for the MAT program.
Captures required MAT coursework at the graduate level.

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources?

No. The academic unit will not request additional resources for this course

Additional Resources:

Academic Units Affected (if any):
None

Course Frequency: This course will be offered in Summer semesters.

Can this course be repeated for credit? Yes

Total number of credits allowed: 3

Total number of completions allowed: 1

Can students enroll multiple times in a term? Yes

Mode of Instruction: Online (Asynchronous)

Endorsements

Leader: shihfen.tu@maine.edu Approved **Date:** 11/03/21

College CC Chair: rebecca.buchanan@maine.edu Approved **Date:** 11/12/21

College Dean: arthur.artesani@maine.edu Approved **Date:** 01/14/22

Leader: _____ _____ **Date:** _____

College CC Chair: _____ _____ **Date:** _____

College Dean: _____ _____ **Date:** _____

DLL: mlarocque@maine.edu Approved **Date:** 02/03/22

Graduate School **Date**

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 Pre-K-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. Collaborating 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.

EHD 301/EHD 511
3 Credits

Classroom-based Prevention & Intervention: Supporting Positive Behavior and Academic Achievement

"Good classroom management starts with the behavior of teachers, not the behavior of students."

Courtney Angelosante
154 Shibles Hall

Tel. 207/581-2472
Courtney.pacholski@maine.edu
Office Hours: Wednesdays 4:00 – 5:00
By appointment

Fax: 207/581-2447
University of Maine
Orono, ME 04469

Delivery Formats:
Wednesdays 5:00-7:00 online/asynchronous
Zoom:

Online Platform: Brightspace
Brightspace Website: **https://umaine.edu/citl/brightspace/**
https://courses.maine.edu/d2l/home/215019

IT Help Center: http://www.umaine.edu/it/helpcenter/

Text: No Required Text

A substantial amount of online course material and resources are available and will be utilized by the course instructors. These resources are mostly supported with federal and state funds, and in many cases will serve as career-long supports for building knowledge, skills, and dispositions regarding school-based approaches to social/emotional development and classroom management.

Course Description
This course examines the application of prevention and intervention theory and practice within classroom settings. Theoretical perspectives on risk and resilience as they pertain to the development of

competent social behaviors, including those found to facilitate social relationships, serve as academic enablers, and promote self-determination will be addressed. Applied behavioral analysis, social learning theory, and the eco-behavioral framework will serve as the primary intellectual roots for this course. Particular emphasis will be given to creating a comprehensive classroom plan based on evidence-based practices and implemented within a cohesive system of behavioral and academic support and intervention. Contextual factors such as home, community, race, culture, and SES, within the broader domain of social justice will provide the ecological backdrop of our study.

Course Objectives:
Students will be able to create supportive classroom environments designed to promote academic and behavioral growth by:

1. Fostering positive relationships among students,
2. Preventing problem behaviors before they occur,
3. Creating explicit behavioral and academic expectations and routines,
4. Actively teaching positive social behaviors that support academic achievement,
5. Providing frequent positive feedback,
6. Implementing educative methods for correcting misbehavior,
7. Utilizing effective instructional techniques such as: active supervision, increased opportunities to respond (OTRs), pre-correction, and surface level management strategies.
8. Building positive alliances with parents,
9. Linking classroom management to schoolwide Response to Intervention (RTI) plans.
10. (511 Students only) Create a self-assessment and action plan to address areas for growth.

Conceptual Framework:
Reflective Practice serves as the centerpiece of the conceptual framework and one of the COEHD's Core Principles for teacher preparation at University of Maine. The reflective teacher is one who seriously acknowledges the complexity of the classroom learning environment and seeks to understand how certain interrelated variables in their particular classroom setting affects student learning. The reflective teacher does this by analyzing and evaluating the effect specific curriculum, instruction, and assessment practices will have on their students. Through such analysis the teacher will be able to create a learning environment that is most appropriate for their group of students.

Reflective practice, as one of the core principles, serves as an overarching theme for the COEHD's teacher education preparation program. The other core principles, "Dedication to Teaching and Learning," "Synthesis of Theory and Practice," and "Collaboration and Mentoring," are developed in the COEHD's required professional courses through curriculum, instruction, and assessment practices that promote the knowledge, skills, and dispositions relevant to a reflective practitioner.

> "Any improvement effort begins with determining what you really care about and want to accomplish and then committing yourself to it. You can always develop expertise. First you must discover your beliefs."
> Peter M. Senge
> The Art and Practice of the Learning Environment

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 these identity groups, along with geographic region, in its definition of diversity. Other identity groups include, but are not limited to: age, community, family status, institutional affiliations, political beliefs, personality styles, interests, and abilities. 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.

Learning Format
A variety of learning opportunities will be provided, including: lecture/discussions, small group case studies, assigned readings, online modules, knowledge checks, and a comprehensive project. In addition, each participant will be asked to reflect on the course material in light of his or her own experience working with children and youth in school and community settings.

Basic Expectations
The basic assumption of this course is that learning results from a continuing process of focused discussion and the application and evaluation of new knowledge. This will take many forms, including activities that require reading, writing, discussing, and applying major concepts and practices related to classroom management and behavioral intervention. All participants are expected to master the principles of preventative behavioral support and intervention, and those evidence-based practices that are identified and discussed as the course progresses. *Students should view advanced reading of assigned background materials and participation in class discussions and online activities as important, but meeting minimal expectations.*

A Few Beginning Ground Rules
The expression of different opinions and exploration of different views is encouraged and will be respected by the instructor and all students enrolled in this course.

Participants must guard against violations of other's privacy. Rules of confidentiality that apply to school situations can easily be breached in discussions about intervention and behavior. In the process of discussing the application of all methods addressed in this course, "real-world" examples will be used. It is critical that no identifying information regarding districts, schools, teachers, parents, or guardians be divulged.

Zoom Meeting Expectations
To promote a sense of community, please have your camera on.
Attention Getting Signal: Raise hand physically or virtually.
Mute when you are not speaking.
"Be curious, not judgmental" TL

"Educators who approach discipline as a process of establishing and maintaining effective learning environments tend to be more successful than educators who place more emphasis on their roles as authority figures or disciplinarians."
Good & Brophy

Course Schedule

Date	Focus	Class Session	Instructional Materials & Readings	Assignments
1/19	Introduction	Course Intro &	Visit these websites and become familiar	Set up a Google site to house all of

	and Purpose	Overview of classroom management and support in a school-wide model	with the contents: PBIS in the Classroom Intervention Central Missouri PBIS Classroom Practices RTI Network: Integrating Academic and Behavior Supports within an RTI Network RTI Network: Integrating Academic and Behavior Supports within an RTI Network (Part 2)	your resources and products for the semester. See directions https://courses.maine.edu/d2l/le/content/215019/viewContent/6291990/View Explore the PBIS, Intervention Central, and Missouri PBIS websites. Read through the opening pages on the RTI Network websites. Bring questions about the websites to class next week.
1/26	Theoretical Models to Explain Behavior	• Developmental Theory • Ecological Theory • Social learning theory • Behavioral theory Why do we use the behavioral approach? Why should we should also use an eclectic approach?	CWPBIS Foundations Chap 1 This is a chapter excerpt from Guilford Publications. *Classwide Positive Behavior Interventions and Supports: A Guide to Proactive Classroom Management* Brandi Simonsen and Diane Myers. Copyright © 2015. Purchase this book: www.guilford.com/p/simonsen RTI & SWPBIS Public Health Approach https://www.cdc.gov/violencepreventio n/about/publichealthapproach.html Social-Ecological Framework for Prevention https://www.cdc.gov/violencepreventio n/about/social-ecologicalmodel.html ACEs https://www.cdc.gov/violencepreventio n/aces/index.html Classroom PBIS and Areas of Enhancement (Reinke, Herman & Stormont, 2013)	Website scavenger hunt https://courses.maine.edu/d2l/le/content/215019/viewContent/6293681/View (10 points)
2/2	Behavioral Theory (Part1)	Three-term contingency (ABC) Function of Behavior Reinforcement Punishment Extinction Why use a positive approach? Create a Classroom Management Purpose Statement	Functional Thinking for Managing Challenging Behavior (Allday, 2018) Why a Positive Approach to Behavior?	~~**Philosophy Statement on classroom management. Imagine a job interview question such as: What is your philosophy or belief system on classroom management (10 Points)**~~ ~~**We will compare at end of semester!**~~
2/9	Behavioral Theory and Application (Part 2)	Function-Based Thinking Classroom	Function-Based Thinking: A Systematic Way of Thinking About Function and Its Role in Changing Student Behavior (Hershfeldt, Rosenberg & Bradshaw,	Create your classroom purpose statement https://docs.google.com/document/d/1vTpvr74u222MAZBhdPSpSPvh4m

		Expectations Matrix	2010) Evidence-based Practices in Class Mgmt: Considerations for Research to Practice (Simonsen et. al., 2008) Missouri Tier 1 Workbook, Chapter 8: Effective Classroom Practices (p. 323 - 326)	QhDQNfEPAruWkIXvA/edit (15 points) Knowledge Check 1
2/16	Tier I: Evidence-Based Components of Classroom Management	Antecedent Strategies: • Maximize structure • Classroom Layout • Expectations/matrix and Rules • Classroom Procedures & Routines • Chaining • Active Supervision Design your classroom space (In class activity)	Missouri Tier 1 Workbook, Chapter 8: Effective Classroom Practices (p. 323- 331; 358-359)	Create your classroom behavior matrix https://docs.google.com/document/d/17k3bahgbnCbJVj_kXF31EmF87tp-vaxo8aXbU2y92FU/edit (10 points) Knowledge Check 2
2/23	Tier I: Evidence-Based Components of Classroom Management	Instructional Strategies: • Explicitly Teaching Behavior Instructional Strategies: • Active Engagement • OTR's Choice	Missouri Tier 1 Workbook, Chapter 8: Effective Classroom Practices (p. 331-353; 360-361) Creating a Positive Classroom Atmosphere: Teacher's Use of BSP (Conroy et. al., 2009) Behavior Specific Praise in the Classroom Making the Three Ps Easier: Praise, Proximity, and Precorrection (Lampi, Fenty & Beaunae, 2005) **Incorporating Choice (Kern & State, 2009)**	Create your classroom routines assignment (10 points)
3/2	Tier I: Evidence-Based Components of Classroom Management	Consequence Strategies to Increase Appropriate Behavior: • Behavior Specific Praise • Pre-correction • Shaping Consequence Strategies to Increase Behavior: • Reinforcement Acknowledge-ment Systems	Strategies Interrupting Crisis Behavior: Pre-Correcting Problem Behavior Missouri Tier 1 Workbook, Chapter 8: Effective Classroom Practices (p. 354-355) Using Precorrection to Manage Inappropriate Academic and Social Behaviors (Crosby, Jolivette & Patterson, 2006) Pre-correction Assignment (In class activity) The Importance of Pre-corrective	Two SEL Lesson Plans OTR, Precorrection, and Active Supervision Assignment

			Statements and Strategies to Increase Their Use (Stormont & Reinke, 2009)	
3/9	Tier I: Evidence-Based Components of Classroom Management	Consequence Strategies to Decrease Behavior: • Punishment • Continuum of Responses to Inappropriate Behavior Consequence Strategies to Decrease Behavior: • Planned Ignoring • Differential Reinforcement • Response Cost • Time Out from Reinforcement	Missouri Tier 1 Workbook Chap 6 Discouraging Inappropriate Behavior	**Acknowledgement System Assignment (10 points)**
3/16	Spring Break		No Class	
3/23	Tier I: Evidence-Based Components of Classroom Management	Culturally Responsive Classroom Practices	CRPBIS Matters (2012) Implementing SWPBIS to Better Meet the Needs of Indigenous Students (McIntosh et. al., 2014)	Continuum of Corrective Consequences Assignment
3/30	Tier I: Evidence-Based Components of Classroom Management	Defining, Measuring and Monitoring Behavior Using data-based decision making	Intervention Circle Methods of Data Gathering Date-based Decision Making	
4/6	Advanced Behavioral Support	• Self-Regulation • Goal Setting • Self-monitoring • Behavior Contracts	Integrated support and intervention. https://dbr.education.uconn.edu/ Beyond Behavior (Ganz)	DBR Plan (not graded)
4/13	Adversity & Resilience (Part 1)	Forms for Significant Adversity Effects of Significant Adversity Resilience: Support and Intervention	https://developingchild.harvard.edu/science/key-concepts/resilience/ https://developingchild.harvard.edu/resources/inbrief-resilience-series/ ACEs https://www.cdc.gov/violencepreventio n/aces/index.html	Work on Google Site
4/20	Adversity & Resilience (Part 2) Family Partnerships	Collaborating with Families	6 Types of Family Involvement Family Engagement National Standards for Family-	

			School Partnerships	
4/27	Equity in the Classroom	Equity in Discipline • What are the facts? Discretionary spaces and vulnerable decision points	5-Point Intervention Approach for Enhancing Equity in School Discipline (McIntosh et. al., 2018) 2015-2016 Civil Rights Data Collection: School Climate and Safety Equity in School Discipline Video https://hechingerreport.org/20-judgments-a-teacher-makes-in-1-minute-and-28-seconds/	Risk Variables Reflection Paper Creating Reliable Alliances Collaboration Assignment
5/2				Google Site Uploaded to TaskSteam-TK20

EDH 301 Student Learning Outcomes, Assignments, & Grading Matrix

InTASC Standard #3: Learning Environments The teacher works with others to create environments that support individual and collaborative learning, and that encourage positive social interaction, active engagement in learning, and self-motivation.		
Outcomes: *Students will:*	Assignment	Points
1. Demonstrate their overall knowledge of classroom management by creating a comprehensive classroom management plan that includes elements of prevention, intervention, and data-based evaluation.	Comprehensive Classroom Management Portfolio Using Google Sites. Website Scavenger Hunt	**15 Points** **10 Points**
2. Demonstrate knowledge of basic principles of behavioral change.	Two take-home knowledge checks	**30 (15x2) Points**
3. Articulate a brief Purpose Statement that communicates your positive, prevention-based, instructional approach to classroom management.	Purpose Statement	**15 Points**
4. Create an ecologically sound matrix of classwide behavioral expectations.	Matrix	**10 Points**
5. Identify classroom routines that incorporate behavioral expectations and facilitate standard operating procedures.	Classroom Routines Assignment	**10 Points**
6. Create lesson plans that use explicit teaching strategies to promote specific social behaviors that promote social relationships and enable academic engagement.	Two Lesson Plan Assignments	**30 (15x2) Points**
7. Develop a tangible system of acknowledgement that acknowledges specific, prosocial student behavior and facilitates frequent and regular positive feedback.	Classwide Acknowledgement Plan	**10 Points**
8. Create a continuum of evidence-based procedures for correcting student behavior.	Continuum of Correction Procedures Due	**10 Points**
9. Demonstrate ability to use pre-correction and active supervision to prevent and intervene with challenging behaviors.	Pre-correction and Active Supervision Assignment	Not Graded
10. Demonstrate specific instructional techniques related to classroom management and effective academic instruction including, opportunities to respond (OTRs), pre-correction, and active supervision.	OTR Activity	Not Graded

11. Demonstrate beginning proficiency in using a "functional framework" to assess and respond to group and individual behavior that interfere with learning.	Functional Thinking In-class Activity	Not Graded
12. Explain and demonstrate four instructional strategies for responding to interfering behavior (e.g., re-direct, re-teach, choice, and student conference).	In-class activity	Not Graded
13. Articulate knowledge and understanding of the how variables such as socio-economic factors contribute to stigma, social rejection, and behavioral challenges in school settings.	Risk Variables Reflection Paper	**10 Points**
14. Demonstrate knowledge and understanding of methods that facilitate collaboration between school personnel and parent/guardians.	Creating Reliable Alliances Collaboration Assignment	**10 Points**
*15. EHD 511 Students Only: Self-Evaluate your classroom management plan and create an action plan to address areas for growth.	Self-Assessment and Action Plan	**20 Points**

Grading:
EHD 301
144 - 160 = A, 128 - 143 = B, 127 - 159 = C, 112 – 126 = D, Below 112 = F

EHD 511
161-180 = A, 141-160 = B, 120-140 = C

Attendance
All students are required to attend all classes, unless prior arrangements are made with the instructor. In the event of a true emergency, common courtesy indicates that students will notify their instructor as soon as possible via email. If you need to speak with the instructor please email or call using the address and phone numbers listed at the beginning of the syllabus. Poor attendance, as defined by **two or more** absences, has the potential to significantly lower one's grade in the course. Cases involving extenuating circumstances will be addressed on an individual basis and at the discretion of the course instructors. Given that this course only meets once per week, five points will be deducted from the student's point total for each unexcused absence.

Late Assignments
Assignments are expected by the due dates, unless prior arrangements are made with the instructor. Late assignments will be subject to a 10% loss in points. Assignments that are more than 2 weeks late will receive a 20% loss in points.

Syllabus Revisions
Please note, this syllabus is subject to change depending on unforeseen circumstances, student learning needs, and/or professional judgment of the instructors.

Candidate Standards, Key Assessment Tasks, and Tk-20
The COEHD will be utilizing the Interstate Teacher Assessment and Support Consortium (InTASC) Core Teaching Standards as the basis for meeting the requirements of our accreditation agency, the Council for the Accreditation of Teacher Preparation (CAEP). These standards convey the learning outcomes expected of teacher degree candidates by the time they receive their degrees. In this course you are required to upload your response to the "key assessment task," identified below, to the Tk-20 data

management system. This course is not complete until this requirement has been met. This course will focus on the InTASC Candidate Standards indicated below:

InTASC Standard #3: Learning Environments

The teacher works with others to create environments that support individual and collaborative learning, and that encourage positive social interaction, active engagement in learning, and self-motivation.

- The **Key Assessment Task** for this course will be your **Comprehensive Classroom Management Plan**. Failure to upload assignments to Tk20 could result in an incomplete or an unsatisfactory grade that could result in having the student removed from teacher candidacy.

- Additional information will be provided in class and is also available on the Tk-20 link on the College of Education and Human Development Website.

UNIVERSITY POLICIES

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. (Last copied July 2020)

For authoritative source see: https://umaine.edu/citl/teaching-resources-2/required-syllabus-information/#Observance

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, 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 privately as soon as possible.

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

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.

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/

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.

Incomplete Grades

I, for "Incomplete." This grade means that, in consultation with the student, the instructor has postponed the assignment of a final grade to allow the student to complete specific work not turned in before the end of the semester. Instructors assign the "I" grade only when they are persuaded that events beyond the student's control prevented the completion of assigned work on time and when the student has participated in more than 50% of the class. If the incomplete work is not submitted within the time allotted by the faculty member, the grade will automatically be changed to an "F" grade. Students receiving an "I" grade are not allowed to re-register for the same course until the incomplete has been made up or converted to an "F" grade. A student receiving an "I" grade may not make up missed work by sitting-in on the course the next time it is taught.

Source: https://studentrecords.umaine.edu/home/grades-and-grading-policy/

Inclusive and Non-Sexist Language:

The use of sexist language is highly discouraged in this course. Language that reinforces sexism can arise from imprecise word choices that may be interpreted as biased, discriminatory, or demeaning even if they are not intended to be. Accordingly, communications in this course, whether delivered orally or in writing, shall be free of sexist language.

For UMaine authoritative source see p. 53 at: https://umaine.edu/studentlife/student-handbook/

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/

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

UMaine Student Conduct:
All students are expected to conform to numerous numerous conduct policies and regulations as set forth in the UMaine Student Handbook.
For authoritative source see: https://umaine.edu/studentlife/student-handbook/

Classroom Civility:
Civility should be conveyed to all others through courteous expression, politeness, esteem and regard for others, and a general respect for others, regardless of differences from self.

University of Maine COVID-19 Syllabus Statement:
COVID-19 is an infectious disease caused by the coronavirus SARS-CoV-2. The virus is transmitted person-to-person through respiratory droplets that are expelled when breathing, talking, eating, coughing, or sneezing. Additionally, the virus is stable on surfaces and can be transmitted when someone touches a contaminated surface and transfers the virus to their nose or mouth. When someone becomes infected with COVID-19 they may either have no symptoms or symptoms that range from mild to severe and can even be fatal. During this global pandemic, it is imperative that all students, faculty, and staff abide by the safety protocols and guidelines set forth by the University to ensure the safety of our campus. All students are encouraged to make the Black Bear Cares Pact to protect the health of themselves, the health of others, and the College of Our Hearts Always.

Black Bears Care Pact: https://umaine.edu/return/black-bears-care/

Symptom checking: The symptoms of COVID-19 can range from mild to severe, and even people with mild symptoms may transmit the virus to others. Students are encouraged to use the symptom checking app each day before attending class or moving about campus and follow the recommendation prompted within the app. Students should monitor for the following symptoms daily: fever (temperature >100.4F/38.0C) or chills, new cough, loss of taste or smell, shortness of breath/difficult breathing, sore throat, diarrhea, nausea, or vomiting, or the onset of new, otherwise unexplained symptoms such as headache, muscle or body aches, fatigue, or congestion/runny nose.

Physical distancing: Students need to make every effort to maintain physical distancing (6 feet or more) indoors and outdoors including within classrooms. The University classrooms and physical spaces have been arranged to maximize physical distancing. Follow the traffic patterns outlined in each building and outdoor space to avoid crowding. If students are in an academic setting (i.e. clinical or lab class) that requires them to reduce physical distancing, they should follow the instructor's guidelines.

Face coverings: Students must wear appropriate face coverings in the classroom. Face coverings must be worn in indoor and outdoor spaces on campus unless people are alone in a room with a door closed or when they are properly physically distanced and do not expect someone to approach them. When face coverings are removed people are placing themselves and those surrounding them at increased risk for COVID-19.

Eating and drinking in classrooms: Students may not eat or drink in the classrooms and are encouraged to take their food or drink into areas designated for these purposes where they can maintain 6 feet physical distance from others.

Hand hygiene: Proper hand hygiene is an effective measure to prevent the spread of COVID-19. Students should wash their hands often with soap and water or use a hand sanitizer with at least 60% alcohol, especially after using the bathroom, before eating or drinking, and before and after going to class or university spaces such as the recreation center, library, or dining halls.

Contingency plans: Classes will be held in various formats to offer flexibility, compassion, and empathy during these unprecedented times. Under certain circumstances, students or instructors may need to miss classes or in-person classes may be disrupted. Students are expected to notify their instructor if they are unable to attend an in-person or online class but will not be penalized for missing class due to illness or the need to care for a family member affected by COVID-19. If a disruption occurs, your instructor will provide communication and contingency plans.

What to do if you have or suspect you have COVID-19: If you have symptoms of COVID-19 or have been possibly exposed to someone with COVID-19, you should stay home, not interact with others, and contact your health care provider immediately to be tested for COVID-19. You may not attend in-person classes and should suspend interactions with others until you are tested. Prior to receiving test results you should quarantine in your living area according to the Maine CDC guidelines below. Please follow the guidance of your health care professional regarding testing, quarantine, and isolation during the testing process and potential illness period.

What to do if someone you know has or may have COVID-19: If someone you know or that you have had close contact with (defined by the ME CDC as 15 mins or more within 6 feet or less) has tested positive for COVID-19, you should stay home and quarantine according to the guidance of the ME CDC, contact your health care provider, and continue to monitor for symptoms. You may be required to quarantine and/or be tested for COVID-19 under these circumstances. You may also have been exposed to COVID-19 by someone you do not know, and it is possible that you could be contacted through contact tracing to determine if you were exposed. Everyone should respond to these confidential questions to ensure the safety of themselves and those around them.

Maine CDC guidelines: https://www.maine.gov/dhhs/mecdc/infectious-disease/epi/airborne/coronavirus/general-information.shtml

If you have questions or would like additional information related to the University of Maine COVID-19-specific policies or procedures please use the following sources:
University Webpages: umaine.edu/return and together.maine.edu

COVID-19 Information line: 207.581.2681

Emergency Operations Center Email Contact: umaine.alerts@maine.edu

THE UNIVERSITY OF MAINE
Graduate School

5775 Stodder Hall
Orono, Maine 04469-5775
umaine.edu/graduate
graduate@maine.edu
207.581.3291

New Graduate Course Proposal

Academic Unit: Learning & Teaching

Course Designator & Number: ESC 552 **Effective Semester:** Fall 2022

Course Title: Teaching Science in Secondary Schools

Course Type: New Course

Proposed Catalog Description:
ESC552 - Teaching Science in the Secondary School (3 credits)
Prerequisite: EHD504; Permission from the instructor.
Instructional strategies and general approaches to teaching science in grades 7-12.
Emphasis on professional literature, curriculum development, teaching and learning styles and reflective teaching. Both ESC 452 and ESC 552 can not both be taken for credit.

Course Prerequisites: EHD504 or instructor permission

Credit Hours: 3 **Component:** Lecture

Cross-Listed Course:

Text(s) Planned for Use:
Ambitious Science Teaching – April 3, 2018
by Mark Windschitl, Jessica Thompson Melissa Braaten,

Teaching Science to Every Child: Using Culture as a Starting Point by John Settlage, Sherry Southerland, Lara Smetana, and Pamela Lottero-Perdue.
Taylor & Francis
©2018, 3rd Edition

Course Instructor: TBD

Reason for new course:
Required class for the MAT program.
Captures required MAT coursework at the graduate level.

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources?

No. The academic unit will not request additional resources for this course

Additional Resources:

Academic Units Affected (if any):
None

Course Frequency: This course will be offered Fall semesters. This course will not result in overload or rearranging of teaching assignments. Course will be cross listed with ESC452, which is already ~~offered each Fall semester.~~

Can this course be repeated for credit? Yes

Total number of credits allowed: 3

Total number of completions allowed: 1

Can students enroll multiple times in a term? No

Mode of Instruction: In-Person

Endorsements

Leader: shihfen.tu@maine.edu Approved **Date:** 11/03/21

College CC Chair: rebecca.buchanan@maine.edu Approved **Date:** 11/12/21

College Dean: arthur.artesani@maine.edu Approved **Date:** 01/14/22

Leader: _____ _____ **Date:** _____

College CC Chair: _____ _____ **Date:** _____

College Dean: _____ _____ **Date:** _____

DLL: _____ _____ **Date:** _____

_____

Graduate School **Date**

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.

ESC 552 - Teaching Science in Secondary Schools

Instructor:
Address:
E-mail:

Office Hours: By appointment
Credits: 3
Class Location:
Class Time:

Prerequisites: *EHD504 or instructor permission*

Course Overview and Goals

Course Overview

In Teaching Science in the Secondary School, you will be introduced to learner-centered teaching of scientific knowledge, practices, and ways of knowing for grades 7-12. Along the way, you will develop your understanding of what science is, how to teach, how to assess science learning, and how to continue to grow as professionals in science education. In particular, you will

1. Develop the knowledge, skills, and dispositions of reflective practice, collaborative action, and lifelong inquiry into science teaching and learning.
2. Expand understandings of learners and approaches that diverse individuals use to construct knowledge.
3. Become competent in locating and evaluating scientific resources appropriate for teaching science content and adapting those materials for use by students with diverse needs.
4. Develop skills in instruction and assessment, especially in scientific argumentation, in order to plan meaningful science lessons for middle and high school students.
5. Develop skills in planning and teaching science lessons that reflect the *Next Generation Science Standards* and the Maine Learning Results.

While you will learn science as you learn to teach science, this course is not designed to provide direct science instruction.

Learning Formats

You will learn about science teaching through the following activities.

- Course readings and discussions of readings
- Participation in science learning experiences
- Designing science learning experiences and assessments
- Observing teaching and learning
- Teaching mini-lessons to your peers and reflecting on your practice

Writing Competency

ESC 552 is designated as a writing-intensive course within the secondary education program. As such, it is designed to foster competence in forms of professional writing about science teaching. The following is a statement of the University of Maine's position with respect to writing in undergraduate programs:

> *The ability to write well is one of the most important attributes of an educated person. To help ensure this outcome the University requires its students to write throughout their academic careers, focusing both on general-purpose writing and professional writing within their majors. Each program must include ENG 101 or equivalent and a minimum of two courses designated as writing-intensive, at least one of which must be within the academic major.*

Instructional Materials

Required Materials

Brightspace: Access Brightspace through https://my.umaine.edu. You will need your maine.edu account to access Brightspace. All assignments (unless otherwise specified) will be posted and submitted to Brightspace. Check frequently for updates to resources and the most current course schedule, as it will likely change to best suit the needs of the class.
Course readings outside of your textbooks will be available on Brightspace.

Microsoft Word: The assignments will be submitted in Microsoft Word Format. If you don't already own a copy you can download the student version for free at https://umaine.edu/it/software/office/

(Google Docs will work too)

Other Resources (no purchase necessary):
Ambitious Science Teaching – April 3, 2018
by Mark Windschitl, Jessica Thompson Melissa Braaten,

Teaching Science to Every Child: Using Culture as a Starting Point by John Settlage, Sherry Southerland, Lara Smetana, and Pamela Lottero-Perdue. Taylor & Francis ©2018. **3rd Edition**

National Science Teacher Association Publications such as The Science Teacher http://www.nsta.org/highschool/

Next generation Science Standards,
http://www.nextgenscience.org

Grading Criteria

A	93-100
A-	90-92.9
B+	87-89.9
B	83-86.9
B-	80-82.9
C+	78-79.9
C	74-77.9
C-	70-73.9
D+	68-69.9
D	64-67.9
D-	60-63.9
F	0-59.9*

Attendance and Participation:

This class is designed to be highly participatory and your ***in-person*** attendance is desired and required. You are expected to attend and participate in all class sessions. Repeated absences, as defined by 2 or more, and/ or consistent tardiness will affect your final grade. You are expected to turn in all assignments on the due date and not being in class does not give you an extension for turning in your assignment. It is your responsibility to get missed work, handouts and homework assignments if you cannot attend class. Communication with the instructor is strongly encouraged throughout the semester.

Assignments and Grading

All assignments must be submitted to Brightspace and will be accepted as Microsoft Word/Google Docs *only.* ***Non-negotiables*** - *NO Pages or PDFs.* - *No late assignments will be accepted unless previously negotiated with me.*	
Attendance, Participation, Habits of Work: Performance on assigned and in class activities, including documenting reflective practice with a focus upon evidence-based practice; participating in classroom discussions, classroom meetings, and any other assigned tasks.	10 points
Discussion Leads on Readings: The readings from the textbooks and NSTA resources form the backbone of this class. Take the time to read, reflect, and make meaning of each assigned reading to prepare for the following class. During the first day of the class, you will choose ***three (3)*** weeks that you will lead a discussion. For these three weeks, you will submit one page summary of the highlights of the reading and at least three questions on Brightspace. Although you don't need to submit a written reflection for the other readings, you should come to class ready to discuss the readings.	15 points
Foliage Reports: In this class, we will think of ways of how to take science outdoors. As a class, we will work on collecting data about the factors that impact the timing and duration of Maine's foliage. We will discuss the factors to investigate in class. For this assignment, you will enter your foliage data (from your backyard or favorite hiking spot) to our collaborative class sheet. You will also provide a brief report/presentation about the story your data is telling us about timing and the duration of foliage.	15 points **Due** Part 1: 9/14 Part 2: 10/5 Part 3: 10/26
Safety Certificate: For this assignment, you will need to go into the link at https://www.flinnsci.com/online-resources/lab-safety-courses/ and create an account to complete a 7-hour long safety training. You don't need to complete the whole training all at once. You can complete the shorter modules and save it to your account. The modules will be on topics including chemical and laboratory safety regulations, principles of toxicology, use of personal protective equipment.	5 points **Due:** 10/19
Virtual Science Teaching Tool: Choose a freely available or low-cost technology (app, website, or tool) that helps with teaching science remotely. You will **write a 2-3 page paper** discussing 1) where other educators can find this technology, 2) steps of how to use the technology to build interactive science learning and 3) strengths and weaknesses of the technology. You will then **prepare a 5-minute presentation** of your report and share it with your classmates.	15 points **Due:** 11/9
Using EQuIP Rubric to Analyze a Unit Plan: Developed by well known science educators, The **E**ducators Evaluating the **Qu**ality of **I**nstructional **P**roducts (EQuIP) Rubric for science provides criteria by which to measure the degree to which lessons and units are designed for the NGSS. You will be given a pre-made unit plan to analyze by using the EQuIP rubric.	10 points **Due:** 10/5
5E Teaching Clinic: This is the Capstone project of the course and will integrate the ideas and practices we learned throughout the semester. For this assignment, you will prepare a 5E lesson to create an interactive learning environment. This 5E lesson plan will include related standards and learning targets, safety issues, equity and access to all students, and the claim-evidence-reasoning framework.	30 points **Due:** 12/7 (Last Class)

Student Learning Outcomes

The course will cover the following general content areas and upon the completion of the course the teacher candidates will:

InTASC Standard #6: Assessment. The teacher understands and uses multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher's and learner's decision-making.

Outcomes - Students will:	**Assessed through:**
Understand how to integrate and demonstrate the process of evaluating, selecting, and planning for authentic classroom assessments.	Homework and lesson plans Microteaching Article Critique Unit Plan
State purposes for evaluation and use a variety of assessment techniques.	Lesson Plans/Unit Plan Microteaching
Understand the advantages and limitations of different tests and item types (true-false, essay, etc.) at the individual, classroom, school, and district levels.	Class discussion Reflective Response
Interpret standardized test results.	Homework

InTASC Standard #7: Planning for Instruction. The teacher plans instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.

Outcomes - Students will:	**Assessed through:**
Plan, teach, and evaluate at least one microteaching lesson with peers.	Microteaching
Understand, apply, and reflect upon the Backwards-Planning Lesson Design Model.	Homework, tests, and unit and lesson plans Reflective Response
Discuss ways that planning contributes to inspire teaching and allows students to take responsibility for their learning.	Lesson plans and microteaching Movie Assignment
Develop educationally sound, technology based, instructional materials.	Microteaching and lesson plan/unit plan

InTASC Standard #8: Instructional Strategies. The teacher understands and uses a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections, and to build skills to access and appropriately apply information.

Outcomes - Students will:	**Assessed through:**
Plan, teach, and evaluate at least one microteaching lesson with peers.	Microteaching Project
Understand, apply, and reflect upon the Backwards-Planning Lesson Design Model.	Microteaching Project; Unit Plan Design
Discuss and participate in a variety of instructional strategies that encourage learners to make connections in multiple content areas.	Microteaching Project; Unit Plan Design; Documentary Analysis; Interview Assignment
Develop educationally sound, technology based, instructional materials	Microteaching Project; Unit Plan Design

University Policies

Mutual Respect

It is expected that students will conduct their affairs with proper regard for the rights of others. All members of the University community share a responsibility for maintaining an environment where actions are guided by mutual respect, integrity and reason. Check your copy of the University Catalog and the University's Student Conduct Code for more information on academic integrity.

Non-Discrimination and Non-Sexist Language

The University of Maine does not discriminate on the grounds of race, color, religion, sex, sexual orientation, national origin or citizenship status, age, disability, or veterans' status. Questions and complaints about discrimination should be directed to the Director of Equal Opportunity, 101 North Stevens Hall, 581-1226.

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/

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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/

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

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. Please see the University of Maine System's Academic Integrity Policy listed in the Board Policy Manual as Policy 314

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.

Incomplete Grades

I, for "Incomplete." This grade means that, in consultation with the student, the instructor has postponed the assignment of a final grade to allow the student to complete specific work not turned in before the end of the semester. Instructors assign the "I" grade only when they are persuaded that events beyond the student's control prevented the completion of assigned work on time and when the student has participated in more than 50% of the class. Source: https://studentrecords.umaine.edu/files/2013/03/2012-2013-Undergraduate-Catalog.pdf

College of Education and Human Development Guidelines

Commitment

- To children and adolescents, developmentally responsive teaching, evidence-based instructional methods, social equity, and challenging curriculum
- Displays enthusiasm for learning and teaching
- Demonstrates ongoing commitment to working with students from diverse backgrounds, ethnicities, and cultures

Responsible Behavior

- Regular class attendance
- Punctuality for classes
- Assignments completed on time
- Use of technology during class for topic-related purposes only
- Turns off cell phones during class
- Uses appropriate language (not profanity or inappropriate gestures)
- Identifies and initiates efforts to facilitate own learning
- Responds to novel problems and situations in creative and responsible ways

Professional Communication/Collaboration

- Cooperates with peers

- Receptive to feedback
- Articulates perspectives clearly
- Differentiates between factual information and personal opinion
- Seeks input from peers and instructors
- Listens to the perspectives of others
- Responds to others (including those with differing perspectives) in a manner that is nonthreatening and promotes dialogue.
- Communicates in a positive manner that promotes collaboration with peers as well as instructor
- Uses Standard English in all communication (oral or written)
- Writes legibly and spells correctly

Confidentiality

- Is discrete in sharing personal information with or about students, parents, and colleagues
- Adheres to professional standards and legal statutes pertaining to confidentiality

Professional Appearance

- Maintains appropriate dress consistent with a professional educational environment.
- Maintains acceptable hygiene that does not distract from the educational experience of peers and/or social interactions with peers.

Integrity/Honesty (The College of Education and Human Development adheres to the University of Maine's Policy on Academic Honesty and Dishonesty.)

- Engages in behaviors and actions that reflect positively on the teaching profession.
- Seeks constructive resolutions to problems.
- Completes his or her own work (does not cheat, plagiarize, lie, etc.)
- Shows respect for self and others

Technology in Class

Please turn off, or put on vibrate, your cell phones. Computers are allowed in the course as long as it is being utilized for classroom purposes (note taking, searches, sharing documents). As a courtesy to others and the instructor in this class, please observe this policy with regard to electronic devices.

Basic Needs Security

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students (visit their office on the 3rd floor of the Memorial Union or call 581-1406) or Mary Mahoney-O'Neil, the associate dean for academic services for the College of Education and Human Development (room 101 Shibles or call 581-2412). Furthermore, please notify the professor if you are comfortable doing so.

Tentative Schedule – ESC552 Fall

Date	**Topic/ Activities**	**Assignments & Readings**
Week 1	Course Introduction & Overview Introduction to the NGSS	**Reading:** DCIs, SEPs, and CCs, oh my!
Week 2	Deep Dive into Scientific Argumentation	***Discussion Reading:*** Engaging Students in the Scientific Practices of Explanation and Argumentation Understanding a Framework for K–12 Science Education by Reiser, Berland, and Kenyon
Week 3	Socioscientific Issues in Science Education Equity in Science Education Classrooms	***Due:*** Foliage Report 1 ***Discussion Reading:*** "Introduction and Background to Socioscientific Issues" in It's Debatable by Zeidler and Khan AND NGSS Case Studies (Appendix D)
Week 4	5E Lesson Plan Framework and Design Strategies	***Discussion Reading:*** BSCS 5E Instructional Model: Personal Reflections and Contemporary Implications by Rodger W. Bybee
Week 5	Assessment of Science Learning	***Discussion Reading:*** Assessing Science Practices: Moving Your Class Along a Continuum by McNeill, Katsh-Singer, and Pelletier
Week 6	History of Maine Education Standards Critical Analysis of the NGSS	***Due:*** Unit Analysis Report/Presentation ***Discussion Reading:*** Stone (2018) - How Maine hurt education by trying to reform it (ProQuest)
Week 7	**FALL BREAK - NO CLASS**	Spend time outside enjoying the crisp New England Fall weather
Week 8	Planning for Engagement with Big Scientific Ideas ***Scientific Investigation:*** Ocean Acidification and Impact on Oysters Part 1	***Discussion Reading:*** Planning for Engagement with Big Science Ideas by *Windschitl, Thompson, Braaten*
Week 9	Deep Dive into Planning and Carrying Out Investigations ***Scientific Investigation:*** Ocean Acidification and Impact on Oysters Part 1 (cont.)	***Due***: Foliage Report 2 ***Discussion Reading***: How Does Climate Change Affect Oyster Populations? by Jane Wolfson, Mary Stapleton, and Asli Sezen-Barrie
Week 10	Developing and Using Models with Students ***Scientific Investigation:*** Ocean Acidification and Impact on Oysters: Part 2	***Discussion Reading:*** Making Thinking Visible Through Models - *Modeling, Part 1 Windschitl, Thompson, Braaten*
Week 11	Teaching about COVID-19: Opportunities and Challenges **Activity:** Science Learning Activity 4	***Due:*** Virtual Teaching Tool Report/Prez ***Discussion Reading:*** Free choice reading about science behind the COVID-19 pandemic

Week 12	Integrating Engineering into Science Classrooms **Activity:** Engineering Activity 1	***Discussion Reading:*** Engineering Design into science Classrooms by Lottero-Perdue AND What is Engineering? by Mel Chua
Week 13	Understanding Science versus Engineering **Activity:** Engineering Activity 2	***Discussion Reading:*** What is engineering? Elaborating the nature of engineering for K-12 education, by Pleasants, Olsen (2018)
Week 14	The many hats of an Engineer **Activity:** Engineering Activity 3	***Discussion Reading:*** Engineering Habits of Mind, by Lucas & Hanson (2016)
Week 15	Engineering & the NGSS Course Reflections **Activity**: Lesson Plan/Teaching Clinic	***Due:*** 5E Lesson Plan ***Discussion Reading:*** Teaching Engineering Practices, by Cunningham & Carlsen (2014)
Week 16	**FINALS WEEK - NO CLASS**	Pass in any remaining assignments. Otherwise, **Happy Holidays**!

Unit Plan Resources
https://www.openscied.org/access-the-materials/

https://www.nextgenscience.org/resources/examples-quality-ngss-design?field_exemplar_tags_tid%5B%5D=371&field_exemplar_tags_tid%5B%5D=376&field_exemplar_tags_tid_1%5B%5D=386&field_exemplar_tags_tid_3%5B%5D=346&field_exemplar_tags_tid_3%5B%5D=351

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graduate@maine.edu
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New Graduate Course Proposal

Academic Unit: Mechanical Engineering

Course Designator & Number: MEE 520 **Effective Semester:** Fall, 2022

Course Title: Nanomaterials and Nanomechanics

New Course

Course Type:

Proposed Catalog Description:
Designator: MEE
Number: 520
Title: Nanomaterials and Nanomechanics
Prerequisites: MEE 320 or permission
Credit Hours: 3
Description: This course covers synthesis of nanomaterials, advanced characterization techniques, general and mechanical behaviors of nanomaterials, and their technological applications. The basic physics and fundamental mechanisms responsible for nanoscale-induced changes in properties will be addressed. The course blends introductory and in-depth lectures with student presentations on recent scientific papers of interests to this class.

Course Prerequisites: MEE 320 or permission

Credit Hours: 3 **Component:** Lecture

Cross-Listed Course:

Text(s) Planned for Use:
Text(s) will be provided as handouts and open-source book chapters.

Course Instructor: Yingchao Yang, Assistant Professor, Currently teaching 4 courses every year.

Reason for new course:
Rationale: The emerging nanotechnology critically depends on our ability to develop new nanomaterials, understand their behaviors and employ them to gain new functionalities at different length scales. There is no course on this contemporary topic in current MEE curriculum. The proposed course will provide students with an opportunity to explore nanomaterials and nanotechnology topics of their interest. In addition, the course will help students fully understand how to use state-of-the-art equipment to characterize nanomaterials, which would benefit their research relating to materials, such as nanocomposites, catalysts, experimental mechanics, sensors, etc.
Anticipated enrollment: 8 - 12
Impact on other courses: The proposed course will provide an opportunity to those student who have strong interest in materials research after taking MEE 320. It will be a great complement to the other graduate courses, such as MEE 555 Smart Materials, MEE 558 Mechanical Behaviors of Materials, and Advanced Manufacturing Courses. Finally, it could be one of electives for Materials Science and Engineering Concentration: I-PhD initiated by FIRST.

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources?

No. The academic unit will not request additional resources for this course

Additional Resources:

Academic Units Affected (if any):

As the emerging nanotechnology critically depends on our ability to develop new nanomaterials, understand their corresponding behaviors, and employ them to gain new functionalities at different length scales, this course will also be available to students outside of mechanical engineering, and should be particularly attractive to those in Physics, Chemistry, Chemical Engineering, and Forest Resources. For example, the synthesized nanomaterials may find broad applications in nanocomposites, energy harvest and storage, field effect transistors, photodetectors, sensors, etc. Such topics would intrigue students in Chemical Engineering and Chemistry. In addition, understanding the working mechanism of state-of-the-art equipment and knowing how to use them to characterize materials would draw significant attention from students who work on catalysts, nanocellulose, microdevices, sensors, etc. in other departments.

Course Frequency: Question 1: Fall every other year. Question 2: No.

Can this course be repeated for credit? No

Total number of credits allowed: _____

Total number of completions allowed: _____

Can students enroll multiple times in a term? No

Mode of Instruction: In-Person

Endorsements

Leader: masoud.raisrohani@maine.edu Approved **Date:** 11/12/21

College CC Chair: musavi@maine.edu Approved **Date:** 01/24/22

College Dean: danah@maine.edu Approved **Date:** 01/24/22

Leader: _____ _____ **Date:** _____

College CC Chair: _____ _____ **Date:** _____

College Dean: _____ _____ **Date:** _____

DLL: _____ _____ **Date:** _____

_____

Graduate School **Date**

MEE 520: Nanomaterials and Nanomechanics
University of Maine
Fall 2022

Catalog Description: This course covers synthesis of nanomaterials, advanced characterization techniques, general and mechanical behaviors of nanomaterials, and their technological applications. The basic physics and fundamental mechanisms responsible for nanoscale-induced changes in properties will be addressed. The course blends introductory and in-depth lectures with student presentations on recent scientific papers of interests to this class. (3 credits). Prerequisite: MEE 320 or permission.

Textbook: Open-source book chapters with supplemental handouts will be provided in lieu of a required textbook.

References:
Synthesis and Fabrication
G. Cao, *Nanostructures and Nanomaterials*, 2nd Edition, Imperial College Press, 2011.
M.J. Madou, *Fundamentals of Microfabrication*, 2nd Edition, CRC Press, 2017.
Mechanics of Nanomaterials
A.N. Cleland, *Foundations of Nanomechanics*, Springer, 2003.
Microscopy Methods
P.J. Goodhew, J. Humphreys and R. Beanland, *Electron Microscopy and Analysis*, 3rd Edition, Taylor & Francis Group, 2000.
J. Goldstein et al., *Scanning Electron Microscopy and X-Ray Microanalysis*, 4th Edition, Springer, 2018.
R. Wiesendanger, *Scanning Probe Microscopy and Spectroscopy*, Cambridge University Press, 2010.

Course Objectives: The objective of this course is to develop a fundamental understanding of nanomaterials (synthesis and characterization) and nanomechanics.

Student Learning Outcomes:
By the end of the course, students will be able to:
- Master how to design and conduct experiments to synthesize certain nanomaterials.
- Understand working mechanism of advanced characterization techniques and identify suitable strategies to characterize materials.
- Understand how to fabricate microelectromechanical systems (MEMS) and nanoelectromechanical systems (NEMS).
- Identify appropriate techniques to perform mechanical testing of certain nanomaterials.
- Know potential applications of nanomaterials.
- Deliver professional presentations.

Lectures:
Tuesday and Thursday

Instructor:
Yingchao Yang, Ph.D.
Email: yingchao.yang@maine.edu
Phone: (207) 581-2523
Office: 227 Boardman Hall

Office hours:
- 1-2 pm on Monday and Thursday;
- or by appointment (email me)

Online Content (Brightspace):
(All class content will be posted)

Homework:
- Must be uploaded on to **Brightspace** which is due at the beginning of class on its due date.

- Late homework will have a 25% grade reduction for each 24-hour period (or fraction thereof) it is late (weekends/holidays excluded).

Grading:

Homework:	15%
Exam I:	20%
Mini Review Paper:	20%
Presentation:	20%
Final Exam:	25%

Class Participation Bonus: you can earn up to 1% bonus (added to the final semester average) based on your in-class participation (not attendance).
The following table shows the minimum letter grade you will receive based on your final semester average rounded to 0.01.

Grading Scale:

93 and above:	A
90.00-92.99:	A-
87.00-89.99:	B+
83.00-86.99:	B
80.00-82.99:	B-
77.00-79.99:	C+
73.00-76.99:	C
70.00-72.99:	C-
67.00-69.99:	D+
63.00-66.99:	D
60.00-62.99:	D-
Below 60.00:	F

Tentative Course Topics:

T 1. Introduction to Nanomaterials and Nanotechnology (1 Week)

Concept of nanomaterials, Advantage of nanomaterials, Size effect on mechanical behaviors of materials, Applications of nanomaterials in nanocomposites, energy harvest and storage, field effect transistors, photodetectors, etc. [1 Lect]
The scope of this course, Presentation and Mini review paper introduction, and Guest lectures. [1 Lect]

T 2. Synthesis of Nanomaterials (2 Weeks)

Zero-dimensional, one-dimensional, two-dimensional, and three-dimensional nanomaterials. [1 Lect]
Physical strategy, such as physical vapor deposition, mechanical exfoliation, high temperature sublimation, etc. [1 Lect]
Chemical strategy: chemical vapor deposition, hydrothermal reaction, solid state reaction, etc. [1 Lect]
Defects in physically and chemically synthesized nanomaterials. [1 Lect]

T 3. Carbon Nanotubes (CNTs), Graphene, and Nanocellulose (1 Week)

Fabrication, mechanical performance, and advanced applications of CNTs [1 Lect]
Fabrication, mechanical performance, and advanced applications of graphene and nanocellulose [1 Lect]

T 4. Material Characterizations (3 Weeks)

Working mechanism and applications of Scanning electron microscope (SEM), Energy dispersive spectrum (EDS), and X-ray diffraction (XRD). [2 Lect]
Working mechanism and applications of Transmission electron microscope (TEM), Raman spectroscopy, and X-ray photoelectron spectroscopy (XPS). [2 Lect]

Working mechanism and applications of Atomic force microscope (AFM), Nanoindentation, Thermal gravity analysis (TGA), and Brunauer-Emmett-Teller (BET). [2 Lect]

Guest Lecture

A guest professor will be invited to give a lecture on one-dimensional or two-dimensional nanomaterials through a zoom meeting. [1 Lect]

Mini Review Paper

1. Select a nanomaterial as focus of the Mini Review Paper.
2. Motivation and background.
3. Methods being used to synthesize the nanomaterial, advantage and disadvantage of different methods.
4. Characterizations of such nanomaterials and what can be learned from these characterizations.
5. Applications of such nanomaterial.
6. Future opportunities for such nanomaterial.
7. Format of the Mini Review Paper: 5 pages or more (without references); 1.15 line spacing; normal margins; 11 in font size; Times New Roman in font type; at least 20 references.

Presentation (1 week)

The presentation will be based on the Mini Review Paper to discuss the importance of a nanomaterial, the methods that have been used to synthesize, application of the selected nanomaterial, and possible future research for such nanomaterial. The presentation will be judged by the instructor and students in the class. [2 Lect]

T 6. Mechanical Testing of Nanomaterials (4 Weeks)

Ex-situ mechanical testing of nanomaterials, e.g., loaded with a polymer substrate; characterization techniques to visualize mechanical behaviors of nanomaterials. [2 Lect]
Fabrication of micro-/nano-mechanical systems. [2 Lect]
In-situ mechanical testing of nanomaterials in SEM, TEM, and other cutting-edge equipment. [2 Lect]
Size effects in mechanics of nanomaterials. [1 Lect]
Interface mechanics of nanocomposites. [1 Lect]

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.

  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.

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graduate@maine.edu
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Graduate Course Elimination

Academic Unit: Communication & Journalism

Course Designator & Number: CMJ 515 **Effective Semester:** Fall 2022

Course Title: Mass Communication Theory

Courses for which this course is a prerequisite:

Reason for course elimination:

Endorsements

Leader: judith.rosenbaumandre@maine.edu Approved **Date:** 12/13/21

College CC Chair: timothy.cole@maine.edu Approved **Date:** 03/16/22

College Dean: emily.haddad@maine.edu Submitted **Date:**

Leader: **Date:**

College CC Chair: **Date:**

College Dean: **Date:**

DLL: **Date:**

Graduate School **Date**

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Graduate Course Modification

Academic Unit: Food & Agriculture

Course Designator & Number: FSN 586 Effective Semester: Fall 2022

Course Title: Sensory Evaluation II

Course Modification Type: Conversion of Existing On-Site Course to Online Course, Description Change, Title Change, Prerequisite Change

Other Modification:

Current Catalog Description:
FSN 586 Sensory Evaluation II
Descriptive, threshold, and satiety testing and appropriate statistical analyses. Lec. 2 Lab 2.
Prerequisites & Notes
FSN 585 or permission.

Credits: 3

New Course Designator & Number: Credit Hours:

New Course Title: Sensory and Consumer Science Applications

New Course Prerequisites:
Graduate status or instructor permission

Courses for which this course is a prerequisite:

Cross-Listed Course:

Course Instructor: Mary Ellen Camire, Professor of Food Science and Human Nutrition, 40% teaching

New Catalog Description:
Assessment of food behaviors and emotions, satiety, purchase intent, and other factors related to food selection. Online class with scheduled synchronous discussions. FSN 585 and FSN 524 are recommended.

Reason for course modification:
The addition of our combined degree and online M.S. options led to FSN 585 being modified to a 3-credit online class. Some of the content from FSN 586 was added to FSN 585. The schedule for the proposed changes in FSN 586 will allow deeper discussion of topics related to sensory and consumer sciences and the design of consumer research studies. Much of the growth in the online graduate program is from persons working in the food industry. The behavior aspects of food selection will also be of interest to nutritionists.

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources?

No. The academic unit will not request additional resources for this course

Additional Resources:

Course Frequency:

Fall of odd years or to fill gaps in the curriculum. This class is part of Dr. Camire's assigned teaching load.

Can this course be repeated for credit? _____

Total number of credits allowed: _____

Total number of completions allowed: _____

Can students enroll multiple times in a term? _____

Mode of Instruction: Online (Asynchronous)

Endorsements

Leader: rcausey@maine.edu Approved Date: 02/09/22

College CC Chair: _____ _____ Date: _____

College Dean: susans@maine.edu Approved Date: 02/28/22

Leader: _____ _____ Date: _____

College CC Chair: _____ _____ Date: _____

College Dean: _____ _____ Date: _____

DLL: mlarocque@maine.edu Approved Date: 03/02/22

_____

Graduate School Date

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Graduate Course Modification

Academic Unit: Food & Agriculture

Course Designator & Number: FSN 603 Effective Semester: Summer 2022

Course Title: Nutrient Changes in the Food System

Course Modification Type: Prerequisite Change

Other Modification: _____

Current Catalog Description:
FSN 603 Nutrient Changes in the Food System

Review of the changes in food nutrient and phytochemical composition and bioavailability from the farm through processing and distribution to consumers.

Prerequisite: FSN 501 or permission
3 credits

New Course Designator & Number: _____ Credit Hours: _____

New Course Title: _____

New Course Prerequisites:
Graduate status in ANS, BUA, FNS, FSN, ACL or PSE programs, or instructor permission

Courses for which this course is a prerequisite: _____

Cross-Listed Course: _____

Course Instructor: Mary Ellen Camire, Professor of Food Science and Human Nutrition, 40% teaching

New Catalog Description:

Reason for course modification:
The sequence of graduate classes prevents some students from taking FSN 501 before FSN 603. Additional resources on nutrients will be added to the class Brightspace site for students who need more information on nutrients.

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources?

No. The academic unit will not request additional resources for this course

Additional Resources:

Course Frequency:
Every other summer via DLL

Can this course be repeated for credit? _____

Total number of credits allowed: _____

Total number of completions allowed: _____

Can students enroll multiple times in a term? _____

Mode of Instruction: _____

Endorsements

Leader: rcausey@maine.edu Approved Date: 02/09/22

College CC Chair: _____ _____ Date: _____

College Dean: susans@maine.edu Approved Date: 02/28/22

Leader: _____ _____ Date: _____

College CC Chair: _____ _____ Date: _____

College Dean: _____ _____ Date: _____

DLL: mlarocque@maine.edu Approved Date: 02/28/22

_____

Graduate School Date

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Graduate Course Modification

Academic Unit: Learning & Teaching

Course Designator & Number: SED 505 Effective Semester: summer 2022

Course Title: Diversity of Development in Childhood

Course Modification Type: Title Change

Other Modification: _____

Current Catalog Description:

_____

New Course Designator & Number: _____ Credit Hours: _____

New Course Title: Infant and Toddler Development

New Course Prerequisites:

_____

Courses for which this course is a prerequisite: _____

Cross-Listed Course: _____

Course Instructor: Mary Ellin Logue, Professor Emerita Early Childhood Education

New Catalog Description:

_____

Reason for course modification:

This course supports students to earn the 081 and 282B with the state of Maine. This title change reflects the required title needed by the state certification office to avoid issues when applying for state certification/endorsement.

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources?

No. The academic unit will not request additional resources for this course

Additional Resources:

Course Frequency:

This course is offered each fall as part of the Early Childhood Certificate and the MEd in Early Intervention/Early Childhood Special Education. The course does not result in overload payments.

Can this course be repeated for credit? _____

Total number of credits allowed: _____

Total number of completions allowed: _____

Can students enroll multiple times in a term? _____

Mode of Instruction: _____

Endorsements

Leader: shihfen.tu@maine.edu Approved Date: 02/12/22

College CC Chair: rebecca.buchanan@maine.edu Approved Date: 02/18/22

College Dean: arthur.artesani@maine.edu Approved Date: 03/02/22

Leader: _____ _____ Date: _____

College CC Chair: _____ _____ Date: _____

College Dean: _____ _____ Date: _____

DLL: _____ _____ Date: _____

_____

Graduate School Date

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Graduate Course Modification

Academic Unit: Learning & Teaching

Course Designator & Number: SEI 524 Effective Semester: Summer 2022

Course Title: Supporting Play and Social-Emotional Development of Infants and Young Children

Course Modification Type: Course Designator Change

Other Modification: _____

Current Catalog Description:

New Course Designator & Number: SED 522 (SED 524 is already in use) Credit Hours: _____

New Course Title: _____

New Course Prerequisites:

Courses for which this course is a prerequisite: This course is not a prerequisite for any other course.

Cross-Listed Course: _____

Course Instructor: Darshana Spach, adjunct, 1 course each summer

New Catalog Description:

Reason for course modification:

SEI is a prior designator for early intervention courses. We have since transitioned all early childhood intervention courses to the SED designator. This change in designator will help to avoid confusion when the Maine Department of Education reviews student transcripts for certification purposes in special education and early childhood.

Does this course addition require additional department or institutional facilities, support and/or resources, or library subscriptions and resources?

No. The academic unit will not request additional resources for this course

Additional Resources:

Course Frequency:

This required course is offered each summer as part of the MEd in special education, early childhood intervention. Offering the course does not result in overload salary.

Can this course be repeated for credit? _____

Total number of credits allowed: _____

Total number of completions allowed: _____

Can students enroll multiple times in a term? _____

Mode of Instruction: _____

Endorsements

Leader: shihfen.tu@maine.edu Approved Date: 02/12/22

College CC Chair: rebecca.buchanan@maine.edu Approved Date: 02/18/22

College Dean: arthur.artesani@maine.edu Approved Date: 03/16/22

Leader: _____ _____ Date: _____

College CC Chair: _____ _____ Date: _____

College Dean: _____ _____ Date: _____

DLL: _____ _____ Date: _____

_____

Graduate School Date