



Integrated Scientific Communication
iCons 2 Renewable Energy (i2e)
ICONS 289H-02
Spring 2023 Course Syllabus

Instructional Team		Class Information
Christine McGrail	email: cmcgrail@umass.edu Office hours: Tues 2-4 or book an appointment at appointment: 15 min: https://calendly.com/cmcgrail-1/15min	<u>Meeting Days & Time:</u> Tues & Thurs 11:30-12:45 <u>Meeting Location:</u> ISB 329
Jared Starr	email: jstarr@umass.edu Office hours: email me to set up a time to meet in person or virtually	
Course Website		
A Moodle site is set up for the course; please refer to it for course materials, assignments, links to resources, relevant announcements, and the most up-to-date information. https://umass.moonami.com/course/view.php?id=34662		

iCons Program Description

The Integrated Concentration in Science (UMass iCons) Program is a 20-credit concentration available to all majors in science, technology, engineering, and math (STEM) at UMass Amherst. iCons is by application only, with all UMass STEM freshmen and sophomores eligible to apply. Accepted students take iCons 1 in the spring of their freshman or sophomore year, learning fundamental problem-solving, teamwork, and communication skills while applying STEM concepts and skills to tackle real-world problems. In the second year of iCons, the student cohort splits into two sub-themes: Renewable Energy and Biomedicine/ Biosystems, with a different section of iCons 2 for each theme.

i2E Course Description

The focus of iCons 2 is honing the skills of 360° communication: communicating to STEM workers in one's own field, with STEM workers in other fields, and with the general public. Communication in i2e is considered broadly as reading, writing, designing/ displaying (through visual media), speaking, discussing, and debating on issues relevant to current problems in renewable energy. Each student tailors i2e to their interests and needs by choosing their own set of learning goals upon which their progress will be measured, and their own set of renewable energy problems that pique their interests. Throughout the semester students will work collaboratively to investigate, research, and communicate areas of interest within the renewable energy space.

Pre-requisites

iCons 1 (ICONS 189H) and College Writing (ENG 112)

Real-World Objectives

- **REQUIRED** - Written proposal for longitudinal study on carbon mitigation, to be presented during the Second Annual UMass Energy Forum
- **HIGHLY RECOMMENDED** - submit your final project idea to green UMass Amherst infrastructure to SEIF during its next round of submissions

Energy Learning Goals

- Converting among various Energy Units (Joule, Calorie, ...) / Power Units (Watt, etc.)
- Kinds of Work (mechanical, gravitational, electrical, chemical, ...)
- Typical Energy Densities for Different Sources
- Energy Conversion Efficiencies
- Environmental Impacts of Energy Conversion, Storage, and Utilization (pollution, climate change)
- Economics of Energy Conversion, Storage, and Utilization
- Social Impacts of Energy Conversion, Storage, and Utilization
- Business Aspects of Energy Conversion, Storage, and Utilization
 - Market adoption opportunities & barriers
 - Bringing new technologies to market

Science Communication and Problem-Solving Goals

- Write Clearly and persuasively
- Speak Clearly and persuasively
- Create clear and persuasive visual presentations
- Communicate clearly and persuasively in various media with both scientists and non-scientists
- Synthesize economic, environmental, and social concerns with technical arguments
- Develop meaningful and answerable research questions that can be investigated in i3E
- Collaborate productively in team projects

Equity and Allyship Statement

I choose for our classroom to be a safe place where we will all treat each other with respect and dignity as we learn from and alongside each other. I welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability – and other visible and nonvisible differences. All members of this class are expected to contribute to creating and maintaining a respectful, welcoming and inclusive environment for every other member of the class.

Classroom Community Expectations

1. **Communication** - Your official UMass email will be used for any course communications and is also the best way to reach us. Your response (when appropriate) is expected within 24 hours. We check email frequently and typically respond the same day, though cannot guarantee responses after 5pm or over weekends/holidays.
2. **Attendance & Engagement** - You are expected to attend *every* class. If you must miss class, let us know as far in advance as possible (exceptions made for documented illness and family emergencies). Unexcused absences will be noted and will impact your grade (see the [University Class Absence Policy](#) for additional information). Beyond showing up, students are expected to be actively engaged throughout class discussions and activities. This includes preparing for class by completing any assigned materials, contributing to class sessions in a positive manner, and responding to the needs and expectations of your team.

3. **Course Norms** - Please *be on time*. We will respect your time by ending classes on time and so please do the same for your peers and instructor by arriving to class on time. During class, *silence cell phones* and keep out of sight. If you are expecting an important call just speak with us before class. *Embrace diversity!* Just like biodiversity improves the health and resilience of an ecosystem, diversity of experience, perspective, and opinion brings a richness and strength to critical inquiry and learning. We will value and respect this diversity within our classroom and our teams.
4. **Assignments** – All assignments will be due at 11am preceding our class meetings unless otherwise noted. Work should always be submitted as Microsoft Word documents in Moodle. No other formats will be accepted unless explicitly specified by the teaching team in advance. Further, work will be considered submitted only once it is received in the proper format. It is your responsibility to confirm this before submission (e.g. *A non-Word doc is submitted on time, but we don't receive the Word doc until a few days later after email exchange. This assignment would be considered late*).. All citations for written work should follow APA format. We will make every effort to return work with constructive feedback within one week (sometimes sooner)
5. **Accommodations** - If you have a documented physical, psychological, or learning disability on file with [Disability Services](#) or the [Center for Counseling and Psychological Health](#) you may be eligible for reasonable academic accommodations to help you succeed in this course. If you require an accommodation, **notify us within the first two weeks of the semester** so that we may make appropriate arrangements.
6. **Academic Honesty** - The University requires honesty of all its members in their academic work. Honesty is necessary to the learning process, and is integral to the atmosphere of genuine inquiry and intellectual curiosity that the University seeks to foster. Academic dishonesty not only contradicts the expectations of a community whose central purpose is the pursuit of intellectual endeavor, it violates University rules and regulations, a fact of which all students must be aware. For more information about what constitutes academic dishonesty, please review the [University Policy on Academic Honesty](#).

Course Grading Criteria

Student progress is assessed using three self-determined learning goals:

- A Substantial Progress in ALL chosen goals
- A- Substantial Progress in writing AND another goal
- B+ Substantial Progress in one goal, AND overall strong effort
- B Substantial Progress in one goal, OR overall strong effort
- B- Some Progress in a goal, and overall strong effort
- C+ No Progress in any goal, with inconsistent effort
- C No Progress in any goal AND little-to-no effort
- D No Progress in any goal, AND negative attitude
- F No-show

Course Assignments

Individually and in your team, will be assessed in the following ranges:

- A Stellar!** Your work and performance, individually and in your team, goes above and beyond.
- B Good!** Your work and performance, individually and in your team, is of high quality with just occasional errors.
- C Decent/Acceptable.** Your work and performance, individually and in your team, is good but suffers from mechanical and/or conceptual errors in some areas, however, effort is evident.
- D Does not meet basic expectations.** Your work and performance, individually and in your team, generally does not meet basic expectations. Little to no effort evident.
- F Not submitted.** Umm... what happened?

Suggested Writing Style Handbooks

- “The Elements of Style” by W. Strunk, Jr. and E.B. White, 4th edition, ISBN-13: 978-0205309023
- Purdue Online Writing Handbook: <https://owl.english.purdue.edu/owl/resource/747/08/>

Junior Year Writing Requirement

This course is qualified by the Faculty Senate Writing Committee to satisfy the Junior Year Writing requirement for participating majors. For more information on participating majors, please consult the Instructor.

Overall Course Structure & Major Deliverables

(note: these are subject to change)

Individual Communication Product Skill Building : 5 weeks	
Cover Letter for self-selected job/internship application	Week 1
Reading inception material and writing affinity abstract slide and affinity document	Week 2
Powerpoint slide and short talk	Week 3
Researching and writing independent research report on the gap in the literature	Weeks 4
Beginning extended project proposal research	Week 5
Mid-Term Proposal Panel: 1 week	
Written project proposal and team pitches (w/Powerpoint Slide & Talk)	Week 6
Extended Team Project: 7 weeks	
Developing extended, multi-phase RE research project & chalk talks	Weeks 7-13
Project pitches and draft position papers	Week 14
The Last Word	
Final papers, video, and Individual Reflection on i2e	Finals Week

In addition to major deliverables, students will be required to reflect on their work in writing frequently, individually and as a team.

Resources

1. Academic Support

- a. Du Bois Library: <https://www.umass.edu> Click on libraries at top of page

Writing Center	https://www.umass.edu/writing-center/
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Citation Management	https://guides.library.umass.edu/CitationManagers?_gl=1*1y8eod7*_ga*MjMwNDM4NjkyLjE2MjQ0TEwNTI.*_ga_21RLS0L7EB*MTY0MTI5ODU4OC40Mi4xLjE2NDEyOTk4MDkuMA..&_ga=2.116996166.1777559992.1641259848-230438692.1624891052
Understanding Plagiarism	https://www.plagiarism.org/article/what-is-citation
Learning Resource Center (with tutoring)	https://www.umass.edu/lrc/
Research Guides	https://guides.library.umass.edu/?_gl=1*1ft9y8u*_ga*MjMwNDM4NjkyLjE2MjQ0TEwNTI.*_ga_21RLS0L7EB*MTY0MTMwMzI1MC40My4xLjE2NDEzMDMzNzAuMA..&_ga=2.125057226.1777559992.1641259848-230438692.1624891052
Borrowing laptops, copying, printing, and more:	https://www.library.umass.edu/services

2. **Wellbeing:** <https://www.umass.edu/studentlife/wellbeing-safety>

Center for Counseling and Psychological Health	https://www.umass.edu/counseling/
Crisis Services	https://www.umass.edu/counseling/services/crisis-intervention
Health Services	https://www.umass.edu/uhs/
Campus recreation	https://www.umass.edu/campusrec/
Jogging Routes (for my personal favorite recreation activity!)	:https://www.umass.edu/campusrec/sites/default/files/documents/pdf/jogging_routes.pdf
Stonewall Center LGBTQIA+ Resource Center	https://www.umass.edu/stonewall/trans-resources

3. **Safety:** Police/emergency: <https://www.umass.edu/umpd/> (for emergency call 911 or 413-545-3111)

Respond to Hate: Take Action	https://www.umass.edu/diversity/fight-hate/respond-hate-take-action
Bias and Crisis Support	https://www.umass.edu/diversity/resources/bias-reporting-crisis-support
Engaging and Supporting Individuals in the Aftermath of Hate	https://www.umass.edu/diversity/fight-hate/engaging-and-supporting-individuals-aftermath-hate
Antiracism, Diversity & Inclusion	https://www.umass.edu/diversity/antiracism-resources

Teaching and Learning Conceptual Framework

Collaboration -- Educators recognize the imperative of collaboration - that we cannot achieve our vision for student learning as independent actors working in isolation. Educators exhibit attitudes, dispositions, and behaviors consistent with a collaborative approach to professional practice, as opposed to an individualistic or competitive approach to professional practice.

Reflective Practice -- Educators recognize the imperative of reflective practice – that to transform the status quo we must be willing to consistently examine and transform assumptions about professional practice. Educators exhibit attitudes, dispositions, and behaviors consistent with a reflective approach to professional practice that allows them to adapt practices based on considered reflection.

Multiple Ways of Knowing -- Educators recognize the imperative of multiple ways of knowing – that to create communities of practice, we must respect the perspectives of different stakeholders. In a spirit of inquiry, educators reflect on and challenge their own perspectives and beliefs and maintain a professional awareness of the influences that their perspectives may have in educational settings.

Social Justice -- Educators recognize the imperative of social justice – that we cannot achieve our vision of excellence and equity in education for all students without knowledge of and attention to the student’s social, cultural, developmental, and personal context. Educators exhibit attitudes, dispositions, and behaviors consistent with promoting social justice that allow them to adopt practices that create and advance equitable conditions in which all students can learn.

Evidence-Based Practice -- Educators recognize the imperative of evidence-based practices that promote student engagement, achievement and performance. In so doing the candidate will be able to: 1) gather and/or examine multiple sources of evidence, 2) determine the credibility, reliability and validity of the evidence, 3) synthesize and draw conclusions from evidence, and 4) use the evidence to modify professional practices that result in increased PK12 student learning outcomes.

Welcome to the course!