THE UNIVERSITY OF
MAINE
1865

AVS 402: Capstone in Animal Science II

Instructor
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Time and mode of instruction

Location

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Description of course and prerequisites
Students participate in hands-on learning experiences based on their academic interest, career goals, faculty mentor, and available resources. Students may opt to conduct hands-on research experiences stemming from either the proposal written in AVS 401 Capstone in Animal Science I, conduct a different research project, develop a business plan, or conduct a non-research project based on their interest in AVS (could be an internship experience). In this course, students present a poster presentation to the instructor and other students at an AVS symposium. AVS 401 and AVS 402 collectively serve as the Capstone experience for Animal and Veterinary Sciences students.

Credit hours: 2
Prerequisites: AVS 401, and ENG 315 or ENG 317; or instructor's permission to take ENG concurrently

Course materials and digital services used.
- Textbook: There is no required textbook for this class.
- Lecture slides: All lectures are provided at the beginning of the semester as pdfs with annotated speaker notes included as comments in the document. These will be updated as needed with corrections.
- Lecture recordings: All lectures are recorded, and audio-only and video files added to Brightspace after class.
- Readings: Reading material will be provided as electronic journal articles or readings.
- Assignments: All assignments can be submitted through Brightspace, and each assignment portal has more detailed instructions, grading rubrics, and the proposal assignment has an optional document template.
- Brightspace Online Learning Software
  - [Log into Brightspace](). Read the [tutorial](). Download the [Pulse app]().
  - Brightspace is the online learning management system used at the University of Maine. In our course Brightspace site, you will be able to access course materials, assignment descriptions, this syllabus, and the course schedule. You will submit your work through Brightspace and will be able to access your grades and feedback as well. You can download a "Brightspace Pulse" app for most mobile devices from your regular app store. Be aware: Some functions in Brightspace work better when accessed through a laptop/desktop than through a mobile device. Support for the website and mobile apps includes video tours, IT Help Desk, and other resources. If you continue to have problems with Brightspace, please let me know as soon as possible.
  - If you wish to retain a personal copy of course materials, please do so before the end of the semester. **You will not have access to a course's Brightspace site after you complete the course.** You can store copies of material you wish to retain on Google Drive, your hard drive, or other media of your choosing. Other materials posted by your faculty may be found at the library.
- Zoom Online Conferencing Software
  - Read the [UMaine tutorial.]()
  - Zoom is an online conference software that students can use to attend class remotely as needed. Students may invite friends and family to watch their presentation using Zoom.

I am happy to provide accommodation to the way course materials are formatted or provided to make them easier to access and understand. Please let me know if you have suggestions to improve the course materials.

Course goals
The student will conduct a research/problem solving project, which can be performed under the supervision of a faculty member, as a group, or independently. In AVS 402, students will complete a poster presentation that will explain the project objectives and the context behind the proposal, the methods, and results/outcomes.

Students will present the poster/project results to faculty and students. Students completing the general education area of Capstone experience will be able to:

1. Synthesize knowledge, skills, and dispositions gained throughout the student's major of study.
2. Demonstrate competence within the discipline through professional conduct and, as appropriate, critical reasoning, analytical ability, and creativity.
3. Demonstrate effective communication skills.

Student learning outcomes and objectives to meet them:

At the conclusion of this course, students will have the skills to perform the following numbered tasks. Course objectives specific to each learning outcome are provided as lettered explanations.

1. How to find and assess the quality of scientific information.
   a. In assembling background information about their topic, students will learn how to perform a search of scientific databases, how to read scientific literature, and how to assess information for validity and generalizability.
   b. In peer-reviewing other student research posters, students will learn how to review, edit, and provide scientific critique.
2. How to create a research/project poster presentation.
   a. Students will learn how to create a scientific project poster.
   b. Students will learn how to explain their process and controls to ensure the project is rigorously designed, how to present information in a logical and scientific manner
   c. Students will learn how to build a citation database and use it to create relevant in-line citations and a reference list.
   d. Students will learn how to create an oral presentation using software tools and present to a technical audience.
3. How to conduct research or manage a project.
   a. Through their participation in research/project activities under the guidance of the instructor or another a faculty mentor, students will learn broadly about scientific research, including ethical standards and institutional approval, identifying research questions and hypotheses to test, designing robust experiments which incorporate experimental controls to test the hypotheses, data collection and curation, data analysis and evaluation, statistical validity, and interpretation of results.

Choosing a research project or experience.

Students will be presented with a list of possible projects that can be carried out in the short time that we have available, or you can suggest your own project area and title. Projects suggested by students will require the instructor or another research mentor to approve the project scope.

Working with animals or humans

Research projects that involve sampling or data collection from vertebrate animals will need Institutional Animal Care and Use Committee (IACUC) approval and you will need to complete the required IACUC training on the Humane Care and Use of Animals, which is available on their website. The IACUC protocol review form should be completed by the student with the assistance of a faculty mentor and submitted to IACUC as early as possible in the semester. If your training is more than four years old, you must complete the new training ASAP. Instructions are available on the IACUC website under "Required Training."

Research projects that involve human subjects or data collection from humans will need IRB approval (Institutional Review Board for the Protection of Human Subjects). Senior research projects conducted within

the framework of the senior capstone experience are considered research and must be reviewed and approved by the IRB. For questions, contact the IRB Office.

Expectations of students and university policies
Attendance and Participation
Students are expected to attend other students' presentations, but it is understood that life often precludes this and that students may be performing field work or are located off-campus. Students may attend class virtually, through Zoom, which will be offered for each class. Students who will miss a significant number of classes, or who require additional accommodation, may contact me to make alternate arrangements. Students who are lactating or caring for young children may bring them to class (see section on Pregnancy, lactation, and parenting).

Students are expected to participate in discussions in class, or on Brightspace. I strive to create inclusive discussions, but if students still find it challenging to participate, please notify me and I will alter the discussion format as needed. Supporting inclusion and community is an active process that involves both invitation, and support to ensure that the learning community is and remains an equitable and inclusive place. Students are expected to conduct themselves in a professional, courteous manner and abide by university policies.

Late Assignments
I will accept assignments for a certain period of time after the due date, however, the assignments in this class build on one another and their due dates are specifically set to help you achieve the end goals of this class. You will not receive a grade reduction for late assignments, but you waive the right to receive feedback which might impact the quality of successive drafts and your next grade. Regular assignments will not be accepted after the last day of class and the final draft will not be accepted after the finals period of the semester. If you cannot complete all assignments within the semester, please contact me about taking an Incomplete instead of a letter grade and setting up deadlines to complete the coursework after the semester in order to receive a letter grade.

Campus Policies
 "The University of Maine is an EEO/AA employer, and does not discriminate on the grounds of race, color, religion, sex, sexual orientation, transgender status, gender expression, national origin, citizenship status, age, disability, genetic information or veteran's status in employment, education, and all other programs and activities." Follow the links for more information.

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

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

Assignments and Assessment: Detailed instructions (written and audio) and rubrics on Brightspace.

50 points	*Participation in research, or other project* - This course is 2 credits, so you should spend ~6 hours/week working on this project.
40 points	*Project poster* –You will create a final poster, using the CUGR poster format for the UMaine Student Symposium or a similar format. Information on the structure and content of different posters will be given in class but will include the following: 1) title, authors, departmental affiliations, and 5 – 6 keywords, 2) introduction/background on previously published, relevant research, 3) a methods section detailing the experimental approach, information dissemination and outreach, 4) results (including photos, figures, graphs, tables), 5) conclusions 6) bibliography/references list with consistent formatting. **You will present you poster to the class at the end of the semester, ~ 10 minutes**
10 points	**Feedback on other students' presentations:** 10 points. Attend other students' presentations and write at least 5 short summaries on them. Write more summaries for bonus points.

Grading (out of 100 points): A = 93–100; A– = 90–92; B+ = 87–89; B = 83–86; B– = 80–82; C+ = 77–79; C = 73–76; C- = 70–72; D+ = 67–69; D = 63–66; D- = 60–62; F = 0–59. The completion of both AVS 401 and 402 with grades of C minus or higher is required for graduation. Grade fractions (ex. 92.5) are rounded up if >.5.

Schedule of lectures and assignments.
Each section is one class, and all the associated materials (lecture notes, readings, assignments, assessments, links) are included in a Brightspace module which corresponds to the name of the lecture and the order they are presented in.

Day	Title, Description, Assignments for each module
	Resources available anytime on Brightspace, recommend watching in week 1
1/16	<mark>Live Lecture 0</mark>: "*Intro to the class*", syllabus and course expectations, finding course materials. What the posters look like. ➢ **Suggested Reading**: if needed, revisit AVS401_finding_a_project_for_402
	<mark>Pre-recorded</mark> Lecture 1: *"Writing your report/poster when your project changes or fails"* Did your project change? Fail? Not happen at all? No worries. This lecture focuses on how to refocus your project or report, or how to talk about null results. ➢ **Reading**: "How to Write About Negative (Or Null) Results in Academic Research ", Aug 2, 2021. ➢ **Suggested Reading**: if needed, revisit lectures from AVS 401 provided again in this course
	<mark>Pre-recorded</mark> Lecture 2: *"Scientific presentations"* Overview of how to give a dynamic presentation, and advice on creating research posters. ➢ **Reading:** Erren_Bourne_10_rules_poster_presentation ➢ **Reading:** Bourne_10_rules_oral_presentation ➢ **Reading:** How to create a research poster: https://guides.nyu.edu/posters
	<mark>Pre-recorded</mark> Lecture 3: "*The art of scientific figures*" How to make graphs and figures that make sense. A brief overview of how to present statistics and format tables. ➢ **Reading**: Rougier_2014_10_rules_scientific_figures ➢ **Reading**: "I'm a lip-reading scientist, here's how I can discuss science with you", Denis Meuthen, Jan 28, 2022. ➢ Tutorials on graphs in Excel ➢ Tutorial on graphs, stats for Excel or Google Slides ➢ Tutorial graph, ANOVA for animal diet study in Excel
	<mark>Pre-recorded</mark> Lecture 4: *"Scientific writing: going from a proposal to a paper"* Overview of formatting, content, and the scientific writing process. This includes learning to condense information, stacking citations, writing in third person, etc. Even though you do not need to write a scientific report for AVS 402, many of you will need to write one for CUGR or other fellowships, and this information is generally useful to all students in the class. ➢ **Readings:** o "Credit Where Credit Is Due: Respecting Authorship and Intellectual Property" o Watling_2017_tuning_your_writing ➢ **Suggested reading (choose 1)** o 10 Advantages and Disadvantages of Case Studies o Anatomy of an Article o Khan_2003_how_to_write_a_systematic_review o Ecarnot_2015_writing_scientific_article
Week 1 - 11	No class – work on your project with your mentor. This course is 1 credit, so you should spend ~3 hours/week working on this project. **Assignment (5 points x 10 weeks = 50 pts)**: EACH WEEK you must write a Discussion blog post about what you did that week. Spring Break week is not included in the count, no assignment that week
Week 13-15	<mark>Poster Presentations due</mark> (40 pts): Final Draft of Project Poster **to be presented in class or at the UMaine Student Research Symposium** in April and I will grade you there. **Feedback on other students' presentations:** 10 points. Attend other students' presentations and write at least 5 short summaries on them. Write more summaries for bonus points.

UMaine resources related to research, statistics, writing, and careers:

- Career Center, https://umaine.edu/career/; help with resumes, applications for vet/grad/med school, interviews, and job negotiations.
  - Biomedical specialist: Samantha M. Wheeler, M.Ed., CCSP, GCDF (she, her, hers), Career Counselor, STEM/Health Professions, Career Center, University of Maine, 300 Memorial Union, Orono, ME 04469, Work: 207-581-2587; samantha.wheeler1@maine.edu
- CUGR research fellowships, https://cugr.umaine.edu/fellowship-opportunities/,
- Fogler Library
  - OneSearch, https://library.umaine.edu/; find scientific literature.
  - Research Data Management: https://libguides.library.umaine.edu/datamanagement
  - Creating a research poster: https://libguides.library.umaine.edu/confposters
  - Creating a research presentation: https://libguides.library.umaine.edu/confposters/presentations
  - Presentation Practice Room, https://library.umaine.edu/use/presentation-practice-room/
- Statistics Consultation, https://umaine.edu/tasc/stats/ (may have a cost associated with this service, talk to your research mentor before setting up a consultation
- Writing Center, https://umaine.edu/wcenter/; tutoring, editing, skills development

There is always someone on campus to help you

My door is always open and I am always willing to help students, however, as a university employee I am also required to keep the community safe by disclosing information on crimes. This means I am a "mandatory reporter". If you disclose something to me, including in assignments, I am obligated to provide this information to the campus Title IX office. The Title IX Office will contact you discretely, and offer you support services, guidance, and help you choose if you want to take action.

For confidential resources on campus:
- Counseling Center: (207) 581-1392; Cutler Health Center: (207) 581-4000; Rape Response Services: 1-800-871-7741; Partners for Peace: 1-800-863-9909.

For support services on campus which may have to report the incident to others who can help:
- (Emergency and non-emergency) Title IX Student Services, (207) 581-1406,
- (emergency and non-emergency) University of Maine Police: (207) 581-4040 or 911.
- (non-emergency) Office of Community Standards: (207) 581-1409.

Support services off campus:
- Mabel Wadsworth Center, Bangor: reproductive health care, abortion, addiction help, etc.

Free food and clothing
- Black Bear Exchange's Food Pantry, Orono campus
- Old Town Crossroads Ministry

University Rainbow Resource Center
The Rainbow Resource Center located in Memorial Union, Room 224, empowers and increases the visibility of Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) people by promoting equality and inclusiveness. We strive to maintain an open, safe, and supportive environment for students, staff, faculty and alumni and provide educational opportunities, information, and advocacy services.

University of Maine | Dr. Sue Ishaq; sue.ishaq@maine.edu, 207-581-2770

Pregnancy, lactation, and parenting

I am happy to provide accommodation for students based on pregnancy, lactation, and parental needs, as well as work with the Office of Equal Opportunities (E.O.). The state of Maine and UMaine policies allow students to breastfeed in any space, including in class. If a lactation space is required, please contact E.O. for arrangements. The Pregnant on Campus Initiative provides pregnancy and parenting resources in Orono.

University Veterans Education and Transition Services (VETS)

University of Maine's VETS Center serves student veterans as they apply to, attend and advance beyond UMaine. The Veterans Center connects student veterans with the resources they need to successfully transition from combat to classroom to career. This includes help navigating the admissions process, applying for financial aid and U.S. Department of Veterans Affairs education benefits, academic assistance and preparing to re-enter the workforce. The VETS Center is located in Room 143 of the Memorial Union.

University Counseling Services

If you are experiencing a mental health emergency: Dial 911. You can also call campus Police Services at (207) 581-4040. For urgent help, please check this page for your options: https://umaine.edu/counseling/need-urgent-help/. Over the course of our time at the University, we may face a variety of concerns – depressed mood, anxiety, stress, family concerns, body image, substance use, sexuality and many others – that may interfere with their ability to focus on their studies. Counseling Services provides mental health and social support for all currently enrolled students. Staff follow strict legal and ethical guidelines concerning the confidentiality of counseling. Counseling services is located in Cutler Health Center, Room 125 and can be reached by phone at (207) 581-1392.

Acknowledgement

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