

Summer Field Course: Sea Turtle Ecology and Conservation Internship

ZOO 4405C

Time: Individual schedules determined by students, minimum of three nights/days per week based at the *Caretta House*, the UCF turtle facility in Melbourne Beach, FL

Instructor: Dr. Kate Mansfield, room 402B, Biological Sciences Building
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Office hours: TBD (by appointment only)

Course Prerequisites

Students must have applied for and been accepted to the Internship the spring semester before the summer session when this course is offered; **by instructor consent only**.

Course Description

The intent of this course is to provide participants with hands-on field and research experience. Students will gain a foundation in the current state of sea turtle science and conservation and will fully participate in an on-going field research program including nighttime sea turtle surveys, daytime sea turtle nest monitoring, and in-water field sampling along 47 km of central Florida's Atlantic coast. Housing will be provided at our sea turtle field station in Melbourne Beach FL, and students will be required to spend a minimum of three nights and three days a week in the field with the UCF Marine Turtle Research Group (MTRG). Field activities will include nighttime surveys (~9pm to 2am), and daytime morning surveys (dawn to early morning). Students will also participate in semi-monthly in-water field research in the Indian River Lagoon.

In addition to field-based activities, students will be required to participate in weekly discussions of readings from scientific literature. Students will explore and learn about relevant topics in sea turtle research and conservation and will have the opportunity to meet sea turtle researchers, managers, and conservationists. These discussions will directly tie with the in-field experience, the field sampling, and the various active research projects conducted by the UCF MTRG. Each week a different topic will be covered with one or more peer reviewed articles assigned. Topics will range from work conducted

locally on the Archie Carr National Wildlife Refuge to international conservation issues. By the conclusion of the course, students will be familiar and proficient in a variety of research techniques, data management, and understand the key conservation and scientific data needs associated with the successful management of endangered and threatened sea turtles.

By the end this internship, students will have received training and extensive expertise in sea turtle handling, sampling (tissue), morphometric data collection, and capture/encounter techniques. Students will receive experience in field equipment maintenance, data collection, management, and database verification and data entry. In addition: **we will provide students with the following training and certification(s):**

- American Red Cross First Aid and CPR training or similar;
- Training and USFWS (or similar) certification in the safe operation of All Terrain Vehicles (ATVs);
- Training in boat safety (students will be required to take a free, online US Coast Guard Boat Safety Training course).

Course Goals

- Provide undergraduate students with field experience as part of an on-going field research project;
- Become proficient in the handling, and work-up of large marine turtle species;
- Become proficient in field netting and in-water sampling techniques;
- Learn best data collection and data management practices;
- Develop interpersonal skills and function as part of a successful team;
- Become proficient in sea turtle conservation, science, and management issues;
- Develop skills in the use and upkeep of ATVs, boats, and other field equipment
- Learn sea turtle conservation techniques on one of the world's most spectacular nesting beaches.

Required Text and Resources

Readings and Texts (copies will be made available to all interns):

Supplemental textbooks (provided)

The Biology of Sea Turtles Volume I

The Biology of Sea Turtles Volume II

The Biology of Sea Turtles Volume III

Scientific papers:

To be assigned each week based on availability of authors/guest speakers.

Videos:

<http://www.changingseas.tv/episode701.html>

Other Resources:*Websites:*

www.seaturtle.org

The UCF Library has an animal behavior resource page available at

<http://guides.ucf.edu/zoo>

- Develop skills in the use and upkeep of ATVs, boats, and other field equipment

General Course Information, Expectations, and Assignments**Required Trainings:**

Safety in the field is our top priority. All students must participate in and pass the required ATV, First Aid and CPR, and Boat Safety training courses offered (at no cost) prior to conducting field work. Students must also meet institutional IACUC requirements (typically via online CITI training modules) and must abide by state and federal endangered and threatened species guidelines and permits at all times.

Readings:

You will be responsible for *all* assigned readings. The instructor or graduate assistants will assign weekly readings. Students are expected to come prepared to participate in weekly paper discussions.

Participation and Group Discussions:

Your attendance is important both for your understanding of the lecture material and for the successful collection of data associated with an on-going research program. Discussion topics/questions will be based on text/reading material and/or group assignments and will be announced before weekly meetings. You will be expected to be prepared to discuss the readings and prepare questions for the reading author or discussion leader. This internship has the same expectations as a job—you must show up and be ready for “work” at the expected times.

Independent Research:

Independent research projects are encouraged. Students are encouraged to think about and develop projects that they would like to conduct either during the summer season, or during the academic year. All independent projects must be discussed with and approved by the instructor or graduate assistants and lab director (Dr. Kate Mansfield).

Performance Evaluation

Required trainings	10%
Field work participation	40%
Paper discussion participation	30%
Final "exam" (presentations)	20%
Total	100%

Grading Scale and Evaluation

A	90-100%	C+	77-79%	D	64-66%
B+	87-89%	C	70-76%	D-	60-64%
B	80-86%	D+	67-69%	F	<60%

Students are required to complete a series of safety-related trainings (boat safety, ATV, CPR) prior to the start of the internship (these trainings will be offered at no cost to the participant). In addition, students are required to attend and participate in trainings related to field data collection and animal handling. Successful completion of these trainings is worth 10% of the student's overall grade. Participation in both the scheduled field work and paper discussions will factor into the grading as will professionalism (90%).

During the internship class, should a student be on track to earn less than a Pass or an A, the instructor will meet with the student to discuss areas of improvement and to design a course of action for the student to follow in order to improve standing.

Course Schedule (subject to revision and weather)

Additional optional and assigned readings will be provided as the summer progresses. The dates and assignments/subjects/readings in this schedule are tentative, and can be changed at the discretion of the instructor or graduate assistants.

Basic course overview and field plan:

- ***First four weeks:*** safety training, training in best field- and animal handling practices, introduction to the project. Focus on learning techniques; training; team building exercises.
- ***Second four weeks:*** current research in the field, intensive fieldwork; training in nest inventory techniques, special topics by local experts

- **Final four to six weeks:** continue fieldwork, special topics by local experts, data management training, final presentations, and career discussion.

Paper discussions (subject to change based on fieldwork, author availability, weather):

Week 1 – Safety training (ATV, CPR); introduction to UCF field research techniques, nighttime and daytime trainings.

- Leader: Dr. Kate Mansfield, Dr. Erin Seney, grad students

Week 2 - Introduction to the Archie Carr National Wildlife Refuge; Video night, leatherbacks

- Video: Inside Nature’s Giants – Leatherback Turtle
- Loggerhead nesting in the Archie Carr NWR
- Ehrhart, L. M., W. E. Redfoot, D. A. Bagley, and K. L. Mansfield. 2014. Long-term trends in loggerhead (*Caretta caretta*) nesting and reproductive success at an important western Atlantic rookery. *Chelonian Conservation and Biology*. 13(2): 173-181.
- Leader: grad students

Week 3 – Introduction to UCF In-water research

- Ehrhart, L. M., W. E. Redfoot, and D. A. Bagley. 2007. Marine turtles of the central region of the Indian River Lagoon System. *Florida Scientist* 70(4): 415-434.
- Leader: grad students

Week 4 – Introduction to sea turtle foraging ecology and diet

- Seney, E. E., Musick, J. A. 2007. Historical diet analysis of loggerhead sea turtles (*Caretta caretta*) in Virginia. *Copeia*. No. 2 (2007): 478-489.
- Leader: Dr. Erin Seney

Week 5 – Sea turtle genetics and disease

- Martin et al. 2022
- Leader: Katie Martin, PhD student

Week 6 – Introduction to the oceanic stage and satellite tracking

- Mansfield, K.L., J. Wyneken., W. Porter, and J. Luo. 2014. First satellite tracks of neonate sea turtles redefine the “lost years” oceanic niche. *Proceedings of the Royal Society B*, Volume 281, No.1781, 20133039. DOI: <http://dx.doi.org/10.1098/rspb.2013.3039>
- Leader: Dr. Kate Mansfield

Week 7 – Stable isotope analyses and foraging ecology

- Ceriani, S.A., J.D. Roth, D.R. Evans, J.F. Weishampel, and L.M. Ehrhart. 2012. Inferring foraging areas of nesting loggerhead turtles using satellite telemetry and stable isotopes. PLoS ONE 7(9): e45335. doi:10.1371/journal.pone.0045335.
 - Leader: Tiffany Dawson, PhD student

Week 8 – July 4th holiday – no paper discussion this week.

Week 9 – Climate change and temperature sex determination and sex ratios

- Reading TBD
- Lolavar and Wyneken 2015
 - Leader: Merope Moonstone, MS student

Week 10 – Sea turtle size at maturity (or TBD)

- Phillips et al. 2021
 - Leader: Abby Crowder, MS student

Week 11 – Introduction to tagging and mark-recapture techniques

- Phillips, K.F., K.L. Mansfield, D. Die, and D.S. Addison. 2014. Survival and remigration probabilities for loggerhead sea turtles (*Caretta caretta*) nesting in the eastern Gulf of Mexico. Marine Biology, 161: 863-870. DOI: 10.1007/s00227-013-2386-2.
 - Leader: graduate students

Week 12 – Fisheries and sea turtle bycatch

- Putman et al. 2020
 - Leader: Matt Larsen, PhD student

Week 13 – Sea turtle navigation (and possible field trip to see Lohmann experiments)

- Brothers, J. R., and K. J. Lohmann. 2015. Evidence for Geomagnetic Imprinting and Magnetic Navigation in the Natal Homing of Sea Turtles. Current Biology.
 - Leaders: Grad students

Week 14 – Final exam presentations

Note that due to the field-based research focus of this course, some of the following required syllabus elements do not apply. In addition to what is listed below, we have the following ground-rules for living at the *Caretta House that apply at all times*:

- All interns must abide by UCF and USFWS housing policies. These policies will be covered during intern orientation and posted in our field station
- Any social media posts that show images of sea turtles must include the following statement in any caption: “This image was taken as part of permitted research activities conducted by the UCF Marine Turtle Research Group”.

- Our work at the coast receives public scrutiny and you represent UCF and our lab when at the coast. You must behave professionally at all times (including when posting images of our work on any social media).
- **You are expected to show up for your shift on time and ready to work.**
- We have a zero tolerance policy for drinking (alcohol) prior to your shift.
- **Safety is a priority:** please inform your instructor or mentor of any health or safety concerns.
- You are required to wear a shirt with UCF Marine Turtle Research Group clearly visible on it when on the beach during your shifts. Intern shirt orders will be partially subsidized by the lab and prior season shirts will be available at minimal cost.
- **We expect that everyone respects each other when living together at the coast.** You are responsible for keeping the field station and equipment clean and ready for use by the next crew.
- **You are expected to abide by all federal and state (and University IACUC) guidelines when handling and interacting with wildlife.**
- Please report any injuries requiring medical attention within 24 hours of the incident. You are covered by Workers Comp. and we are required to report any incident within 24 hours.
- **No night swimming.**

Academic Conduct:

Students should familiarize themselves with UCF's Rules of Conduct at <https://scai.sdes.ucf.edu/student-rules-of-conduct/>. According to Section 1, "Academic Misconduct," students are prohibited from engaging in

1. Unauthorized assistance: Using or attempting to use unauthorized materials, information or study aids in any academic exercise unless specifically authorized by the instructor of record. The unauthorized possession of examination or course-related material also constitutes cheating.
2. Communication to another through written, visual, electronic, or oral means: The presentation of material which has not been studied or learned, but rather was obtained through someone else's efforts and used as part of an examination, course assignment, or project.
3. Commercial Use of Academic Material: Selling of course material to another person, student, and/or uploading course material to a third-party vendor without authorization or without the express written permission of the university and the instructor. Course materials include but are not limited to class notes, Instructor's PowerPoints, course syllabi, tests, quizzes, labs, instruction sheets, homework, study guides, handouts, etc.
4. Falsifying or misrepresenting the student's own academic work.
5. Plagiarism: Using or appropriating another's work without any indication of the source, thereby attempting to convey the impression that such work is the student's own.
6. Multiple Submissions: Submitting the same academic work for credit more than once without the express written permission of the instructor.
7. Helping another violate academic behavior standards.

8. Soliciting assistance with academic coursework and/or degree requirements.

Responses to Academic Dishonesty, Plagiarism, or Cheating:

Students should also familiarize themselves with the procedures for academic misconduct in UCF's student handbook, *The Golden Rule*: <https://goldenrule.sdes.ucf.edu/>. UCF faculty members have a responsibility for students' education and the value of a UCF degree, and so seek to prevent unethical behavior and respond to academic misconduct when necessary. Penalties for violating rules, policies, and instructions within this course can range from a zero on the exercise to an "F" letter grade in the course. In addition, an Academic Misconduct report could be filed with the Office of Student Conduct, which could lead to disciplinary warning, disciplinary probation, or deferred suspension or separation from the University through suspension, dismissal, or expulsion with the addition of a "Z" designation on one's transcript.

Being found in violation of academic conduct standards could result in a student having to disclose such behavior on a graduate school application, being removed from a leadership position within a student organization, the recipient of scholarships, participation in University activities such as study abroad, internships, etc.

Late assignments will receive a 10% deduction per day that the assignment is late.

After two days, late assignments will not be accepted and you will not receive credit for the assignment. **Make-up assignments will be determined on a case-by-case basis and in advance of any deadline (see policies above).** As noted above, if you must miss an assignment, exam, discussion, etc. and you have a valid reason for doing so (see above), you **must inform me or your mentor/supervisor by email PRIOR to the missed class/activity or ASAP.** If you must miss for medical/health reasons, please provide a doctor's note. Students are expected to notify me in advance (at the beginning of the semester) if they intend to miss class to observe a holy day of their religious faith.

The current UCF policy concerning **incomplete grades** will be followed in this course. Incomplete grades are given only in situations where unexpected emergencies prevent a student from completing the course and the remaining work can be completed the next semester. Your instructor is the final authority on whether you qualify for an incomplete. Incomplete work must be finished by the end of the subsequent semester or the "I" will automatically be recorded as an "F" on your transcript.

As of Fall 2014, all faculty members are required to document students' academic activity at the beginning of each course. In order to document that you began this course, I will be documenting attendance during at least the first couple weeks of class. Failure to attend class will result in a delay in the disbursement of your financial aid and incur the wrath of the bean counters.

Technology and Media:

Zoom: N/A. This course is always face to face. It will not be offered if COVID conditions are not safe enough for 20-24 individuals to live part time in our field station at the coast.

Email:

My preferred method of communication is via email. Please put the course name in the subject line. If I do not respond within 24 hours, please send a follow-up email. I will try to respond to all emails within 24 hours. Please note that I may not open emails received after 6 pm at night until the following morning.

Phones in Class:

Please turn off and put away all phones paper discussions. Texts, phone calls, web searching, etc. will not be tolerated.

Laptop and iPad (or tablet) Usage:

Laptops and tablets may be used in class for the sole purpose of taking notes or accessing readings. All wireless/internet connections must otherwise be turned off and/or in airplane mode.

Disability Access:

The University of Central Florida is committed to providing access and inclusion for all persons with disabilities. Students with disabilities who need access to course content due to course design limitations should contact the professor as soon as possible. Students should also connect with Student Accessibility Services (SAS) <http://sas.sdes.ucf.edu/> (Ferrell Commons 185, sas@ucf.edu, phone 407-823-2371). For students connected with SAS, a Course Accessibility Letter may be created and sent to professors, which informs faculty of potential course access and accommodations that might be necessary and reasonable. Determining reasonable access and accommodations requires consideration of the course design, course learning objectives and the individual academic and course barriers experienced by the student. Further conversation with SAS, faculty and the student may be warranted to ensure an accessible course experience.

Professionalism Policy:

Per university policy and classroom etiquette; mobile phones, iPods, *etc.* **must be silenced** during all paper discussions and trainings, as well as during field work when not used for field-based communications. Those not heeding this rule will be asked to leave the classroom/field immediately so as to not disrupt the learning environment (or disrupt sensitive wildlife). Please arrive on time for all course activities. Students who habitually disturb the class by talking, arriving late, *etc.*, and have been warned may suffer a reduction in their final class grade or may be asked to leave the internship.

Campus Safety Statement for Students in Online-Only Courses:

Though most emergency situations are primarily relevant to courses that meet in person, such incidents can also impact online students, either when they are on or near campus to participate in other courses or activities or when their course work is affected by off-campus emergencies. To stay informed about emergency situations, students can sign up to receive UCF text alerts by going to <https://my.ucf.edu> and logging in. Click on "Student Self Service" located on the left side of the screen in the toolbar, scroll down to the blue "Personal Information" heading on the Student Center screen, click on "UCF

Alert”, fill out the information, including e-mail address, cell phone number, and cell phone provider, click “Apply” to save the changes, and then click “OK.”

- Students with special needs related to emergency situations should speak with their instructors outside of class.

Deployed Active Duty Military Students:

Students who are deployed active duty military and/or National Guard personnel and require accommodation should contact their instructors as soon as possible after the semester begins and/or after they receive notification of deployment to make related arrangements.

Make-Up Assignments for Authorized University Events or Co-curricular Activities:

Students who represent the university in an authorized event or activity (for example, student-athletes) and who are unable to meet a course deadline due to a conflict with that event must provide the instructor with documentation in advance to arrange a make-up. No penalty will be applied. For more information, see the UCF policy at <https://policies.ucf.edu/documents/4-401.pdf>.

Religious Observances

Students must notify their instructor in advance if they intend to miss class for a religious observance. For more information, see the UCF policy at: <http://regulations.ucf.edu/chapter5/documents/5.020ReligiousObservancesFINALJan19.pdf>.

COVID-19 and Illness Notification:

Students who believe they may have a COVID-19 diagnosis should contact their mentor/graduate student/Dr. Mansfield or Seney so proper contact tracing procedures can take place.

Students **should not come** to the field station if they are ill, are experiencing any symptoms of COVID-19, have tested positive for COVID, or if anyone living in their residence has tested positive or is sick with COVID-19 symptoms. CDC guidance for COVID-19 symptoms is located here: (<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>).

Students should contact their instructor(s) as soon as possible if they miss class for any illness reason to discuss reasonable adjustments that might need to be made. When possible, students should contact their instructor(s) before missing class.

Course Accessibility and Disability COVID-19 Supplemental Statement:

Accommodations may need to be added or adjusted should this course shift from an on-campus to a remote format. Students with disabilities should speak with their instructor and should contact sas@ucf.edu to discuss specific accommodations for this or other courses.