FISHERIES TECHNIQUES (FAMA 5329)
Department of Life Sciences
Fall 2018

A. COURSE INFORMATION
Course number/section: FAMA 5329.001 (lecture), FAMA 5329.101 (lab)
Class meeting time: M&W 1-1:50 p.m. (lecture), W 2-5 p.m. (lab)
Class location: ECDC 219B (lecture) and ECMS 207 (lab)
Course Website: bb9.tamucc.edu/ 73636.201809

B. INSTRUCTOR INFORMATION
Instructor: Dr. Simon Geist
Office location: Science Lab1, #101
Office hours: MW 11:00-12:30, T 9:00-11:00
Telephone: 361 825 4164
e-mail: simon.geist@tamucc.edu
Appointments: Set up via phone or email at least 24 hrs in advance

C. COURSE DESCRIPTION
Catalog Course Description
3 sem. hrs. (2:3) This class is designed to provide graduate (masters and doctoral) students with practical experience in the theory and application of traditional and modern fisheries sampling and analytical techniques used in Fisheries Science and Management. The course will emphasize on standard sampling design and data interpretation. This is a hands-on field and laboratory based course that will develop skills that are most commonly used by fisheries scientists and those commonly sought by future employers.

Extended Course Description/Major Areas of Study
I. Understanding of Traditional and Modern Gear Collection Techniques
   a. Techniques for Collection of Inshore and Estuarine Fishes at different Life Stages
   b. Techniques for Collection of Coastal and Offshore Fisheries at different Life Stages
II. Understanding Sampling Design and Gear Biases
III. Age and Growth of Fishes
IV. Traditional and Modern Tagging Techniques for Fishes
V. Essential Fish Habitat Determination
VI. Techniques to Study Food Webs

D. PREREQUISITES AND COREQUISITES
Prerequisites
none
Corequisites
none
E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Textbook for lectures (highly encouraged, further information on first day of class):

Optional Textbook(s) or Other References
Students will be provided a list of further recommended readings at the beginning of the class.

Supplies
None

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students will have a level of understanding of fisheries techniques at the graduate level and in-depth understanding and skill that will include the ability to:

- Utilize and determine which techniques to measure fish population parameters and to carry out large-scale field studies and experimentation.
- Perform scientifically sound data collection and interpret, analyze, and present scientific data both orally and written
- Use a variety of fish sampling gear and techniques, and mark recapture methods to conduct fisheries assessments
- Effectively use otolith analysis for age and growth determination
- Methods to study feeding ecology
- Design, conduct and critique fisheries field studies and guide research to emphasize the interpretation of data, accomplishments, weaknesses and significance of that work.

G. INSTRUCTIONAL METHODS AND ACTIVITIES

This course will be a combination of lecture and lab.

Extensive reading will be required from the text book and journals, newspapers, magazines and other library holdings that would be expected of students at the graduate level. Students will be required to read, present and discuss current literature (up to 3 papers per week) on the respective topics discussed in class.
Learning success of theoretical content taught in the lectures will be assessed by exam.

Labs will be a combination of field work and exercises in the lab.

Students will write lab reports to document practical work including a data analysis of results. Lab reports should be submitted individually to the instructors within 7 days, continuously throughout the semester.

In addition, the students will develop and conduct small research projects along with the topics covered in class for which they will prepare a short research paper to be submitted and presented towards the end of the class (individual and group projects possible, ideally related to thesis research, instructor will make sure that time slots to work on research projects will be allocated on a regular basis during lab hours).

Extent and number of field trips is depending on available funds generated by the field trip fees (number of students). Depending on the topic of the small research projects, field sampling may need to be conducted outside of class meeting times occasionally.

Field trips using university boats and vehicles require full day outings where the class will meet on Wednesdays earlier than the actual class times (probably 2-3 boat field sampling days). All further planning will be made in class prior to the field days.

H. MAJOR COURSE REQUIREMENTS AND GRADING

The activities lined out in section G. will be graded to evaluate learning success of the student, with the proportional importance lined out in the table below.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
</tr>
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<tbody>
<tr>
<td>Topic presentations and participation in discussions</td>
<td>15%</td>
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<tr>
<td>Exam</td>
<td>15%</td>
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<tr>
<td>Lab (Participation and Reports)</td>
<td>40%</td>
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<tr>
<td>Research paper and presentation (lab project)</td>
<td>30%</td>
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</table>

GRADING SCALE (%): 

- 90.0 - 100.0 = A
- 80.0 - 89.9 = B
- 70.0 - 79.9 = C
- 60.0 - 69.9 = D
- 0.0 - 59.9 = F

The assignments and exams shown in sections G and H are directly related to the Student Learning Outcomes described in Section F.
I. **COURSE CONTENT/SCHEDULE**

*Important Note!*

Changes in this course schedule are very likely. Order of topical blocks may differ depending on the research projects chosen by the students. Field sampling scheduling is highly dependent on weather and may change on short notice, and scheduling will be made in accordance to the participant’s schedules. Changes will be discussed in class and announced via blackboard.

<table>
<thead>
<tr>
<th>Class #</th>
<th>Date</th>
<th>Topic Lecture</th>
<th>Topic Lab</th>
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<tbody>
<tr>
<td>1</td>
<td>Aug 27</td>
<td>Introduction to Course</td>
<td></td>
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<tr>
<td>2</td>
<td><strong>Aug 29</strong></td>
<td>Care and handling of sampled organisms</td>
<td>Planning of Field Sampling and Research project Topics</td>
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<td>3</td>
<td>Sep 3</td>
<td>Labor Day (no class)</td>
<td></td>
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<td>4</td>
<td><strong>Sep 5</strong></td>
<td>Sample Preservation</td>
<td>Project planning - Sampling Design</td>
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<td>5</td>
<td>Sep 10</td>
<td>Fish Sampling Methods Inshore</td>
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<tr>
<td>6</td>
<td><strong>Sep 12</strong></td>
<td>Field Day 1 (tentative)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Sep 17</td>
<td>Basic Indices for Population Dynamics</td>
<td></td>
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<tr>
<td>8</td>
<td><strong>Sep 19</strong></td>
<td>Basic Indices for Population Dynamics</td>
<td>Sampling 1: Sample processing – ID &amp; Length Frequency, Weight and Condition, etc</td>
</tr>
<tr>
<td>9</td>
<td>Sep 24</td>
<td>Trophic Ecology</td>
<td></td>
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<tr>
<td>10</td>
<td><strong>Sep 26</strong></td>
<td>Trophic Ecology</td>
<td>Sampling 1: Data analysis</td>
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<tr>
<td>11</td>
<td>Oct 1</td>
<td>Trophic Ecology</td>
<td></td>
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<tr>
<td>12</td>
<td><strong>Oct 3</strong></td>
<td>Field Day 2 (tentative)</td>
<td></td>
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<tr>
<td>13</td>
<td>Oct 8</td>
<td>Trophic Ecology</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td><strong>Oct 10</strong></td>
<td>Age and Growth</td>
<td>Sampling 2: Sample processing – diet and otoliths</td>
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<td>15</td>
<td>Oct 15</td>
<td>Age and Growth</td>
<td></td>
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<tr>
<td>16</td>
<td><strong>Oct 17</strong></td>
<td>Age and Growth</td>
<td>Sampling 2 Data Analysis</td>
</tr>
<tr>
<td>17</td>
<td>Oct 22</td>
<td>Age and Growth</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td><strong>Oct 24</strong></td>
<td>Age and Growth</td>
<td>Growth Analysis – Otolith Increments</td>
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<tr>
<td>19</td>
<td>Oct 29</td>
<td>Fish Sampling Methods Offshore</td>
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</tr>
<tr>
<td>Date</td>
<td>Event/Activity</td>
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<tr>
<td>20 Oct 31</td>
<td>Acoustics Growth Analysis – Data Analysis</td>
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<td>21 Nov 5</td>
<td>Acoustics</td>
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<td>22 Nov 7</td>
<td>Tagging Tagging training</td>
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<tr>
<td>23 Nov 12</td>
<td>Early Life Stages Sampling Methods</td>
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<tr>
<td>24 Nov 14</td>
<td>Sampling Day 3 (tentative)</td>
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<td>25 Nov 19</td>
<td>Tagging</td>
<td></td>
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<tr>
<td>26 Nov 21</td>
<td>Reading Day (no class)</td>
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<tr>
<td>27 Nov 26</td>
<td>Early Life Stages</td>
<td></td>
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<tr>
<td>28 Nov 28</td>
<td>Early Life Stages Sampling Day 3 Sample analysis</td>
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<tr>
<td>29 Dec 3</td>
<td>Course Evaluation</td>
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<td>30 Dec 5</td>
<td>Wrap up and Project Presentations</td>
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<tr>
<td>31 Dec 7-13</td>
<td>Final Exam period</td>
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Note: Changes in this course schedule may be necessary and will be announced to the class by the instructor. The assignments and exams shown are directly related to content of syllabus sections above.

All important dates for general deadlines can be found online in the Fall 2018 Academic Calendar: [https://www.tamucc.edu/academics/calendar/2018_fall.html](https://www.tamucc.edu/academics/calendar/2018_fall.html).

**J. COURSE POLICIES**

**Attendance/Tardiness**
Students are expected to be in attendance for all lectures and labs. Students should inform the instructor via email if they are not able to attend a class before the class starts.

**Late Work**
Late work will only be accepted with prior approval from the Instructor.

**Extra Credit**
Extra credit is given if course evaluations are submitted in time by the participants.

**Cell Phone Use**
Phone conversations not allowed, but texting allowed. For courtesy, please place phones on silent during class.

**Laptop Use**
Allowed.

**Food in Class**
Eating in class is permitted so long as it does not disrupt the learning environment or the health and safety of others in the class, except if building/room indicates otherwise.

**Missed and Make-up Exams**
A Grade of “0” will be assigned for any Missed Exam. Prior notice will be required to miss the scheduled exam date/time. If absence is caused by an emergency such as accident, illness etc. an alternative date for the exam may be arranged with the professor.

**Participation**
Students are expected to take an active role in lecture and lab activities.

### K. COLLEGE AND UNIVERSITY POLICIES

- **Academic Integrity (University)**
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

- **Classroom/Professional Behavior**
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the
University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. **Please consult with your academic advisor, the Financial Aid Office, and me, before you decide to drop this course.** Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Please consult the Academic Calendar (http://www.tamucc.edu/academics/calendar/) for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage at http://sci.tamucc.edu/students/GradeAppeal.html. For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.
  If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.
  http://disabilityservices.tamucc.edu/
**Statement of Academic Continuity**

In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

**L. OTHER INFORMATION**

**Academic Advising**

The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

**GENERAL DISCLAIMER**

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.