Course Description

Basic concepts of sampling. Design of cost-effective sample surveys. Sampling methodology applicable to natural resources: simple random, stratified, systematic, multi-phase and multi-stage. Cluster sampling, ratio, regression and difference estimation. Line transects. Computer simulation of sampling methods. Introduces remote sensing, geographic information and global positioning systems. We have designed this course to introduce students to the wide variety of sampling methods and analyses of the diversity of natural resources. The focus in this course is applying statistics to data collected in the field. We will explore the tools needed to collect and analyze natural resources data. We will introduce best practices for interpreting and reporting results from a study.

Learning Objectives

By the end of this course, students will be able to:

• Calculate and interpret statistics such as mean, median, and mode; variance; standard-deviation; standard-error; and confidence intervals.
• Identify the key parameters of a population of interest from a question.
• Choose an appropriate sampling system to match a question for a given natural resource and implement that sampling system.
• Review a sampling methodology and critique its value in answering the question posed by estimating the given natural resource population/characteristic.

Pre-Requisites: This course is a junior-level course intended to provide students a foundation in measuring various aspects of natural resources. Students should have completed an introductory statistics course before enrolling in the course (e.g. STA2023).
Course Instructors

Dr. Dan Johnson is an Assistant Professor in the School of Forest Resources and Conservation. He has a PhD in Biology (Indiana University), MS in Environmental Science (IU) and a BS in Forestry (Purdue University).

Dr. David Fox is a Lecturer in the School of Forest Resources and Conservation. He has a PhD in Forest Resource Conservation (University of Florida), MS in Forest Soils (Duke University) and a BA in Geology (Thiel College).

Teaching Assistant

Luke Magee – mageel@ufl.edu

Course Resources

Recommended:


COVID 19 Statement

Times are tough and life is really weird right now. The learning team is going to do its best to make sure you have the resources and learning environment to reach the course objectives. We also realize that unforeseen things may happen. Reach out and let us know and we will deal with circumstances as best we can. Do not stress about this course we are here to help you get through.

Course Requirements

Students may access lectures, assignments, readings, and supporting materials through the course Canvas site as they become available.

**Technology Requirements:**

A computer or mobile device with high-speed internet.

A webcam, headset and/or microphone, and speakers.

Latest version of web browser. Canvas supports only the two most recent versions of any given browser.

Installation of proctoring software may be required.

**Synchronous online sessions may be recorded:**

By sharing your video, screen, or audio during any synchronous online class sessions, you are consenting to being recorded for the benefit of students who cannot attend live as well as for class review during the current semester. If you have special circumstances or concerns about privacy, it is your responsibility to discuss it with your instructor. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Course Evaluations

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at: https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/.

Summaries of course evaluation results are available to students at: https://gatorevals.aa.ufl.edu/public-results/.
Grading policy

Lab Assignments 50%
Quizzes 20%
Discussion boards 10%
Mid-Term Exam 10%
Second Exam 10%

Details of each component of grade are detailed on page 5 along with due dates for lab.

Grading Policy
A 90.0-100
B+ 86.7-89.9
B 83.7-86.6
B- 80.0-83.6
C+ 76.7-79.9
C 73.7-76.6
C- 70.0-73.6
D+ 66.7-69.9
D 63.7-66.6
D- 60.0-63.6
E < 60.0

More information on UF grading policy may be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Code of Conduct
SFRC is a diverse school and we are better for it. We strive to provide a welcoming and supportive environment for all people, regardless of background or identity. By participating in this community, participants accept to abide by these ground rules. Any form or behavior to exclude, intimidate, or cause discomfort is a violation of these ground rules. In order to foster a positive and professional learning environment, we expect and encourage the following kinds of behaviors in all platforms and events:

• Use welcoming and inclusive language
• Be respectful of different viewpoints and experiences
• Gracefully accept constructive criticism
• Focus on what is best for the community
• Show courtesy and respect towards other community members

Class expectations

Attendance
Lab attendance is required. We will be meeting synchronously and will be working in teams. Absence from lab requires a 750-1000 word essay synthesizing the lab material for the week.

If you have a planned absence, please inform the instructors at least a week in advance.

In the case of emergency absences, inform the instructors as soon as possible.

Excused absences must be consistent with university policies: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/ and require appropriate documentation.

Late / make-up work
Late assignments will be graded as follows:
< 24 hrs: -10%
< 48 hrs: -25%
> 48 hrs: -50%

Make up work: contact the instructor to agree on new deadlines (only for excused absences)
<table>
<thead>
<tr>
<th>Week</th>
<th>Monday Lecture</th>
<th>Wednesday Lecture</th>
<th>Tuesday Lab (5017)</th>
<th>Wednesday Lab (5016)</th>
<th>Thursday Lab (5045)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>31 Aug</td>
<td>Course Overview – The mean Stats review</td>
<td>Measures of center and variation</td>
<td>Excel Primer</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>7 Sep</td>
<td><strong>No class- Holiday</strong></td>
<td>Testing means</td>
<td>Excel Part II &amp; Statistics in Excel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>14 Sep</td>
<td>Vegetation Sampling methodology</td>
<td>Sampling</td>
<td>Vegetation-Overstory</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>21 Sep</td>
<td>Vegetation Sampling tools and techniques</td>
<td>Vegetation sampling continued</td>
<td>Vegetation-Understory</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>28 Sep</td>
<td>GIS</td>
<td>Soils</td>
<td>GIS</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>5 Oct</td>
<td>Tortoise Burrow sampling</td>
<td>Linear regression</td>
<td>Tortoise burrow Inventory</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>12 Oct</td>
<td>Fish Sampling – tools and techniques</td>
<td>Fish Sampling – tools and techniques</td>
<td>Fish Sampling (Dr. Cichra)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>19 Oct</td>
<td>Marine Fish Sampling</td>
<td>Mid-Term Exam</td>
<td>Marine Fish Lab (Dr. Paterson)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>26 Oct</td>
<td>Invasive species</td>
<td>Qualitative measures</td>
<td>Sampling the media (Dr. Clark)</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>2 Nov</td>
<td>Remote sensing</td>
<td>ANOVA</td>
<td>Vegetation Sampling using aerial photography and remote sensing (Dr. Broadbent)</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>9 Nov</td>
<td>Scientific Literature</td>
<td><strong>No Class - Holiday</strong></td>
<td><strong>No labs Due to Holiday</strong></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>16 Nov</td>
<td>Human Sampling – tools and techniques</td>
<td>Conclusions</td>
<td>Human Sampling - recreational use, demographics (Dr. Stein)</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>23 Nov</td>
<td>Online review</td>
<td>No Class</td>
<td><strong>No lab – Holiday Break</strong></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>30 Nov</td>
<td>Review</td>
<td>Second Exam</td>
<td>Open lab to finalize assignments</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>7 Dec</td>
<td></td>
<td></td>
<td>Have a great winter break</td>
<td></td>
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</tbody>
</table>
Software and services

Software Use: All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Services for Students with Disabilities: The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. 0001 Reid Hall, 352-392-8565, https://disability.ufl.edu/

Campus Helping Resources:
Students experiencing crises or personal problems that interfere with their general wellbeing are encouraged to utilize the university’s counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- University Counseling & Wellness Center: 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu Counseling Services Groups and Workshops Outreach and Consultation Self-Help Library Wellness Coaching
- U Matter We Care, www.umatter.ufl.edu/
- Career Connections Center, First Floor JWRU, 392-1601, https://career.ufl.edu/. Student Complaints:
- Online Course: http://www.distance.ufl.edu/student-complaint-process
Academic Honesty
As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.” You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code.

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