

SPREADSHEETS AS A RESEARCH TOOL - AGR 6932
SPR1/27433 (Online main campus synchronous),
SPR2/27434 (REC synchronous),
SPR3/25651 (Online Agroecology synchronous/asynchronous)

Session Fall 2022

Credit Hours: 01

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Based on my experience with consulting requests from graduate students it is apparent that many if not most graduate students lack spreadsheet skills. This course is geared towards incoming graduate students who want to improve their skills. Long-term users of spreadsheet would probably also learn a technique or two. Even your instructor is not immune to learning new things while teaching. While recognizing the dominance of Office 365 software at UF, the techniques taught in this class are applicable to all software with spreadsheet capabilities.

ALL SECTIONS

NOTE: ALL COMMUNICATION will be through CANVAS. This protects both sides in any discussion as CANVAS provides a track record of a given exchange. I will generally respond quickly anytime between 5 am and 8 pm.

Office hours: by appointment through CANVAS and UF Calendar Function.

Time: Thursdays Periods 04 and 05 (10:40 – 12:35 am).

Lectures and Discussion Synchronous delivery via the permanent Zoom link <https://ufl.zoom.us/j/7485382243>. All sessions will be recorded.

Hands-on group discussion sessions: Video conferencing via Zoom. Students will be able to sign up for a group during first week of class. One of the requirements is that students will have to have a camera so participants can see each other. A mutually agreeable time will be set during the first week of class.

Software: EXCEL or any other software with spreadsheet capabilities

Prerequisites:

1. Basic numeric competency, i.e., knowing the difference between string and numeric variables
2. Basic spreadsheet competency such as opening, closing, Save as, etc.

Learning objectives:

1. Familiarize students with spreadsheets as a research tool
2. Enable students to recognize a good workbook/spreadsheet design
3. Enable students to design a workbook/spreadsheet for their own research.

Structure:

Each module consists of an introductory lecture, a discussion forum, and a practical assignment that reinforces the concepts presented in class.

Schedule and Topics:

Module 1: History of spreadsheet – Setting the topic limits for this class

Lecture: What do spreadsheets best and tales from the dark side.

Discussion: Students experience when using worksheets with other software

Reading: Data Organization in Spreadsheets

Practice:

Assignment: Testing your current knowledge

Module 2: A spreadsheet is but one part of the research enterprise

Lecture: Ranges and keyboard shortcuts

Discussion: Data Organization in Spreadsheets

Practice: Create a worksheet and practice shortcuts

Project 1: Obtain a data entry workbook from your lab group and critique it

Assignment: Creating a subfolder for yourself

Module 3: Calculations in EXCEL

Lecture: Ranges and keyboard shortcuts

Discussion: Revisit Data Organization in Spreadsheets

Practice: Create a worksheet and practice shortcuts

Project 1: Obtain a data entry workbook from your lab group

Assignment: Creating a subfolder for yourself

Module 4: Getting a worksheet ready for data analysis

Lecture and In-class practice: Using functions to convert variable names

Practice: Revisit in-class demonstration to ensure that you understand what we did

Project 2: Suggest improvements for the workbook you critiqued in Module 2

Module 5: Reproducible research through standardization

Lecture: Standardization as a tool for reproducible research

Reading and Discussion: Data Validation and Other Strategies for Data Entry

Practice: Data entry limits and validation strategies

Module 6: Spreadsheet Apps

Lecture: Opportunities and limitations when using spreadsheets for calculations

Discussion: What to consider when designing a data entry template

Assignment: Creating a data entry template for a hypothetical experiment

Module 7: Complicated spreadsheet

Lecture: Yes, there is value in a simple but clear approach

Discussion: What did you learn this semester

Final Project: Create a data entry workbook for your own research

Course Requirements:

- 1. Assignments (50 points):** **Assignments** may take on different forms, e.g., a design problem, a literature discussion, etc. Depending on the assignment, they may have to be completed individually or by groups. The point value of a given assignment will depend on the difficulty of that assignment. A term is quite short in the great scheme of things and we need to move at a pretty good clip. There are some basic rules: **(1)** Assignments will **only** be accepted through CANVAS or Dropbox (if specified as such). **(2)** Assignments have to be turned in by the deadline given. If an assignment is turned in late, a penalty of 10% may be assigned. **(3)** If I request a correction, you have 2 days to turn in that correction. These assignments will be in the form of problem sets, literature reviews, group discussion, etc.
- 2.** Obtain a data entry workbook from your lab group and critique it based on the criteria established in class. Please notice that I wrote critique not criticize as there is a difference (**10 points**).
- 3.** Use the workbook from **(2)** as a starting point and design a better one. Detail, why you believe your spreadsheet design would better serve the needs of the lab (**20 points**).
- 4.** Design a workbook for your own research (**20 points**).

Performance Evaluation:

Required performance measures are given in the following table. Assignments turned in late be assessed a penalty of 5 point per day. If you foresee a problem (Field trips in other classes, Field research requiring you to be away from campus, Jury Duty, National Guard Duty, etc.) please see me beforehand. I am generally very accommodating, but it is not my job to anticipate your needs.

Homework / Projects/ Discussion	Points
Assignments	50
Project 1: Spreadsheet critique	10
Project 2: Improving a spreadsheet	20
Final project: Design your own data entry tool	20
TOTAL MAXIMUM POINTS	100

The course will follow the customary +/- grading scale, where 95 - 100 = A, 90 - 94.9 = A-, 87 - 89.9 = B+, 83 - 86.9 = B, 80 - 82.9 = B-, 77 - 79.9 = C+, 73 - 76.9 = C, 70 - 72.9 = C-, 67 - 69.9 = D+, 63 - 66.9 = D, 60 - 62.9 = D-, and 0 - 59.9 = E.

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: <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>.

Services for Students with Disabilities

As a professor with a physical disability, whose needs have been addressed by the University, I am sensitized to disability issues. I will do everything within my power to help you succeed. If you have a need, I would also strongly encourage you to seek assistance from the Dean of Students Office (DSO). The Disability Resource Center (DRC) within that office 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://www.dso.ufl.edu/drc/students>

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general well-being 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/cwc/

Counseling Services Groups and Workshops Outreach and Consultation Self-Help Library
Wellness Coaching

Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/

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.

In-Class Recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium,

to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student

Online Course Evaluation Process

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/> .

You may complete the evaluation as soon as it becomes available. The results will not be available to your instructor until the final exam period has passed.