

## Spreadsheet Based Decision Support Systems

ESI 4356 Section 410T

**Class Periods:** T,R Periods 2-3, (8:30am – 10:25am)

**Location:** CSE E220

**Academic Term:** Fall 2023

### **Instructor:**

Dr. Katie Basinger-Ellis

Email Address: [katie.basinger@ufl.edu](mailto:katie.basinger@ufl.edu)

Office Phone Number: (352)294-7730

Office Hours: **TBD**

### **Teaching Assistant/Peer Mentor/Supervised Teaching Student:**

Please contact through the Canvas website

- Lexi Bobb: [lexibobb@ufl.edu](mailto:lexibobb@ufl.edu)
- Andrea Camacho-Betancourt: [andreacamachobet@ufl.edu](mailto:andreacamachobet@ufl.edu)

### **Course Description**

Applications of decision support systems in industrial and systems engineering; Developing and implementing decision support systems arising in industrial and systems engineering using popular database management and spreadsheet software; Microsoft Excel; Visual Basic for Excel. (4 credits).

### **Course Pre-Requisites / Co-Requisites**

COP 2271 and ESI 4312 with minimum grades of C.

### **Course Objectives**

To understand the usefulness of decision support systems arising in the practice of industrial and systems engineering; to become expert users of spreadsheets and to learn how to take advantage of a large array of tools available in spreadsheet programs; to learn how to accomplish tasks programmatically in a spreadsheet and how to design user friendly graphical user interfaces; to understand the issues that arise in the conceptual development and implementation of effective and user friendly decision support systems; to design, develop, and implement integrated decision support systems for industrial and systems engineering applications.

### **Materials and Supply Fees**

Students will need their own laptop (preferably PC) with access to Microsoft Excel. See *Required Textbooks and Software* below.

### **Relation to Program Outcomes (ABET):**

This is a course with significant design content. Throughout the semester, students will complete a team project expected to meet specific design criteria. This course supports the ISE undergraduate program educational objectives of producing graduates who

- “will be successful professionals in industrial and systems engineering or other disciplines”,
- “can acquire advanced knowledge through continuing education or advanced degree programs”
- “can become active leaders in their profession and/or community”

Outcome	Coverage*
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	High
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare,	High

as well as global, cultural, social, environmental, and economic factors	
3. An ability to communicate effectively with a range of audiences	High
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	Low
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	High
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	Medium
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	Low

\*Coverage is given as high, medium, or low. An empty box indicates that this outcome is not covered or assessed in the course.

#### **Required Textbooks and Software**

No textbook is required. Lectures will be provided to students through videos posted on Canvas and in-class presentations. Other course materials, including instructions, slides and exercises can also be downloaded from the course website on Canvas.

**The development software required for this course is Microsoft Excel 2013 or later.**

**If you have a MAC you will need to be able to run Windows on your device, or plan to use a Windows device for programming. Although Excel works on a MAC there are limitations, and some functions are not accessible. If you choose to use a MAC as your main device for this course, support is limited due to instructor and TA usage of PC's. There are online message boards that you can use for support.**

#### **Recommended Materials**

Developing Spreadsheet-Based Decision Support Systems – Using Excel and VBA for Excel Authors: Michelle Seref, Ravindra Ahuja, and Wayne Winston ISBN: 0975914650

Commented [BL1]: Might need to add iClicker information

### Course Schedule

Week	Date	Tuesday		Thursday	Notes
		Module Topic	Date	Module Topic	
1			24-Aug	Welcome and Intro	
2	29-Aug	Intro to VBA	31-Aug	Intro to VBA	
3	5-Sep	User Forms and Objects	7-Sep	User Forms and Objects	
4	12-Sep	Collections	14-Sep	Collections	
5	19-Sep	Advanced User Interface (Career Fair)	21-Sep	Advanced User Interface	Career Fair is this week, Attendance will not be taken
6	26-Sep	Advanced User Interface	28-Sep	Review	
7	3-Oct	Exam 1 - Tentative	5-Oct	Functions and Formulas/Dynamic Charts/Pivot Tables	
8	10-Oct	Functions and Formulas/Dynamic Charts/Pivot Tables	12-Oct	Functions and Formulas/Dynamic Charts/Pivot Tables	
9	17-Oct	Statistical Analysis/Simulation	19-Oct	Statistical Analysis/Simulation	
10	24-Oct	Solver	26-Oct	Solver	
11	31-Oct	(Halloween, yes we have class) Review	2-Nov	Exam 2 - Tentative	
12	7-Nov	Project Work	9-Nov	Project Meeting 1	
13	14-Nov	Project Work	16-Nov	Project Work	
14	21-Nov	Project Work	23-Nov	Thanksgiving -> No Class	Thursday No Class
15	28-Nov	Project Work	30-Nov	Project Presentations	
16	5-Dec	Project Presentations	7-Dec	Reading Day	Thursday No Class
17	11-Dec	Project Presentations			Exam Week

### Attendance Policy, Class Expectations, and Make-Up Policy

- This class is a flipped course and will require you to watch video lecturers outside of class and participate in exercises during the class time. Only a few exercises will be due each week, however, exams will cover material from all exercises, and you will be expected to know this material.
- Attendance is not required, but it will be to your benefit to attend all lectures. If you have completed all the current week's exercises, you can either watch the lecture videos for the next week or assist your classmates in understanding the material. The instructor will not repeat material in office hours just because you didn't attend class.
- Lectures are there to facilitate efficient learning, not chatting with friends, surfing the net, or sleeping. You should be focused on the course material and the in-class exercises assigned, not on activities that do not involve course work. Those who behave inappropriately will be asked to leave.
- Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies. Click here to read the university attendance policies:
- <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

Commented [BL2]: Might need to change if we do iclicker

### Make-Up Policy

- Excused absences require appropriate documentation.
- If you miss an exam due to a health problem, you will need to provide documentation that indicates the date of the visit. A note indicating that you were seen at the health center the day of the exam is not sufficient documentation of a medically excused absence from an exam. The note must say that you were medically unable to take the exam.
- In case of an exam conflict, you will need to present evidence of the conflict to the instructor. Employment interviews, employer events, weddings, vacations, etc. are not excused absences. Excused absences must be consistent with university policies in the undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) and require appropriate documentation.

### Assignments & Grade Disputes

- Your grade will be based on 2 night-exams, weekly assignments, and a team project.

- Exams: In each exam, I include a few challenging tasks, which only the best students will be able to answer. These are the questions that distinguish the A students.
- All assignments must be submitted via E-learning unless specified otherwise.
- **Assignment deadlines. TBD based on first day**
- Only the instructor has the authority to grant late submissions.
- Exam grade disputes must be made to the instructor **within one week after grades are posted**. Any grade dispute after the specified period will not be considered. The following describes the procedure:
  - (1) Within one week after your grade has been posted, e-mail the instructor requesting a grade breakdown,
  - (2) Compare your solution to the solution posted on the website using the detailed grade breakdown you receive,
  - (3) If you still have questions about your grade, to resolve the issue either go to the instructor's office hours or request an appointment.
- Project teams will consist of 4-6 students. Throughout the semester, you will evaluate your teammates and you will be evaluated by them. Your grade will be based not only on your team score but also on your teammates' evaluations of you.
- Project development will take place in stages with specific deadlines. For each deadline the project deliverable and peer evaluations are due at the time specified on Canvas.

**Evaluation of Grades – TBD based on outcome of student vote**

Assignment	Total Points	Percentage of Final Grade
iClicker		5%
Homework Sets	100 each	15%
Exam 1	100	27.5%
Exam 2	100	27.5%
Team Project	100	25%
		100%

Commented [BL3]: TBD on the first day

Commented [BL4R3]: Do we want to do attendance using iClicker?

**Grading Policy**

The following is given as an example only.

Percent	Grade	Grade Points
93 - 100	A	4.00
90.0 - 92.99	A-	3.67
86 - 89.99	B+	3.33
83 - 85.99	B	3.00
80.0 - 82.99	B-	2.67
76 - 79.99	C+	2.33
73 - 75.99	C	2.00
70.0 - 72.99	C-	1.67
66 - 69.99	D+	1.33
63 - 65.99	D	1.00
60.0 - 62.99	D-	0.67
0 - 59.99	E	0.00

There may or may not be a curve at the end of the semester. This depends on the overall performance of the class throughout the semester. Please keep in mind that this is a challenging and time-consuming course, and the percentage of A's has historically been in the 10% range. You have to study hard and perform well in every course activity in order to deserve an A. Please note that this is a required course for ISE students. This means that you must earn, at a minimum, a C in order to satisfy the requirement.

More information on UF grading policy may be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

### ***Students Requiring Accommodations***

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

### ***Course Evaluation***

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.a.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.a.ufl.edu/public-results/>.

### ***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 Honor Code and Student Conduct Code.

### ***University Honesty Policy***

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students 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.” The Honor Code (<https://sccr.dso.ufl.edu/process/student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

### ***Commitment to a Safe and Inclusive Learning Environment***

The Herbert Wertheim College of Engineering values varied perspectives and lived experiences within our community and is committed to supporting the University’s core values, including the elimination of discrimination.

It is expected that every person in this class will treat one another with dignity and respect regardless of race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information, and veteran status.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- Your academic advisor or Graduate Program Coordinator
- HWCHE Human Resources, 352-392-0904, [student-support-hr@eng.ufl.edu](mailto:student-support-hr@eng.ufl.edu)
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, [taylor@eng.ufl.edu](mailto:taylor@eng.ufl.edu)
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, [nishida@eng.ufl.edu](mailto:nishida@eng.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. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

#### **Student Privacy**

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <https://registrar.ufl.edu/ferpa.html>

#### **Campus Resources:**

##### Health and Wellness

###### **U Matter, We Care:**

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

**Counseling and Wellness Center:** <https://counseling.ufl.edu>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

###### **Sexual Discrimination, Harassment, Assault, or Violence**

If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, [title-ix@ufl.edu](mailto:title-ix@ufl.edu)

###### **Sexual Assault Recovery Services (SARS)**

Student Health Care Center, 392-1161.

**University Police Department** at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

##### Academic Resources

**E-learning technical support**, 352-392-4357 (select option 2) or e-mail to [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu).  
<https://lss.at.ufl.edu/help.shtml>.

**Career Connections Center**, Reitz Union, 392-1601. Career assistance and counseling; <https://career.ufl.edu>.

**Library Support**, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

**Teaching Center**, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.  
<https://teachingcenter.ufl.edu/>.

**Writing Studio, 302 Tigert Hall**, 846-1138. Help brainstorming, formatting, and writing papers.  
<https://writing.ufl.edu/writing-studio/>.

**Student Complaints Campus**: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>; <https://care.dso.ufl.edu>.

**On-Line Students Complaints**: <https://distance.ufl.edu/getting-help/>; <https://distance.ufl.edu/state-authorization-status/#student-complaint>.