

SUR5365 - Digital Mapping

1. OVERVIEW

This course covers theoretical concepts and practical aspects for mapping and analyzing digital spatial data. It is comprised of lectures and computer labs and uses various software packages to visualize, integrate, and analyze spatial data. Various online resources are presented to obtain free geodata and to present data in online maps.

- Fall semester, 3 credits
- 100% online, synchronous and asynchronous component
- <http://elearning.ufl.edu/>

Course Prerequisites: No formal course prerequisites. Prior experience with ArcGIS Pro software, Microsoft Excel, and scripting/programming in any programming language (e.g., Python, R, Java) is an advantage. Basic analytic geometry, trigonometry, analysis, and statistics is recommended.

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- Please use the Canvas message/Inbox feature for fastest response
- Virtual office hours by appointment

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Lectures:

Fridays: 11:45 am - 2:45 pm (per. 5-7), via Zoom; links to recordings are provided on the course website

Recommended reading materials:

- No course book is required
- References to books, book chapters, and online resources will be given during the lecture periods
- Short instructional videos closely related to the lecture content can be found at the [Geomatics @ FLREC YouTube channel](#)

Software requirements:

- ArcGIS Pro 2.8 and Microsoft Excel will be used for many topics taught in this course. If unfamiliar with ArcGIS Pro, it is recommended to run through practice tutorials beforehand. ArcGIS Pro download and installation instructions are provided on the course website under the Week 1 module.
- Additional free software packages used (e.g., HTML editors) will be introduced in the different course modules.

2. LEARNING OUTCOMES

The course objective is to provide students with the following competencies at the completion of the course:

1. Use map projections and geodetic datums for mapping
2. Apply critical thinking skills in GIS including the interpretation of computational results
3. Handle digital topographic maps and access their base layers, e.g., digital elevation models
4. Visualize spatial data in online maps (e.g., with ArcGIS online, use of open-source libraries)
5. Perform software-based analysis on lidar (light detection and ranging) data

3. COURSE LOGISTICS

- Throughout the semester, students will be given 10 home assignments, 6 quizzes, and 3 online discussions. For each assignment/quiz/discussion, a due date and time is given, which is usually the beginning of the next class (11:45am Friday).
- Assignments are graded based on timeliness, correctness of computations, and interpretation of numerical results with written feedback on student creativity and technical ability provided by the instructor; quizzes are auto-graded based on correctness of multiple choice questions with correct answers shown after completion; and discussion items are graded within a week based on creativity, completeness, technical correctness and the number of comments provided to peers.
- There is a 1-week turnaround for assignment and discussion grading. Quizzes are autograded instantaneously in Canvas.
- This course is a distance education course taught as live lectures using the virtual classroom software Zoom. Lecture materials can be downloaded from weekly modules on the Canvas website.

The Canvas system should be used as the platform for written communication between students and the instructors. Questions and suggestions to the whole class can also be posted under the Discussions tab. Any short-term changes concerning lectures or other course components will be announced through Canvas. Feel free to call the instructors with any questions.

Technology Requirements:

- A computer or mobile device with high-speed internet connection
- ArcGIS Pro runs only on Microsoft operating systems. If students use a Mac computer or other operating systems, they are encouraged to use ArcGIS Pro in UF Apps (<https://info.apps.ufl.edu/>).
- A headset and/or microphone and speakers to participate in live sessions
- For Zoom: A supported web browser on a supported operating system (Windows, Mac OS, Linux); and minimum bandwidth. More details can be found [here](#).

Using Zoom:

Live lectures and office hour meetings (per individual student requests) will be conducted with the Zoom conferencing software. Sessions can be joined by clicking a link posted by the instructor on Canvas.

Grades:

<i>Item</i>	<i>Percentage</i>
Home assignments (10 assignments @ 7% each)	70%
Online quizzes (6 quizzes @ 3% each)	18%
Online discussions (3 discussions @ 4% each)	12%
Total	100%

Grading scale:

Grade	Percentage	Grade	Percentage
A	92.0-100.0	C+	78.0-79.9
A-	90.0-91.9	C	72.0-77.9
B+	88.0-89.9	C-	70.0-71.9
B	82.0-87.9	D	60.0-69.9
B-	80.0-81.9	E	0-59.9

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

4. COURSE CONTENT

Week	Topic	Assignment
Week 1, Aug 27	Introduction Coordinate systems and geodetic datums	D1, Q1
Week 2, Sep 3	Map projections: Introduction Cylindrical projections	Q2, H1
Week 3, Sep 10	Conic projections	Q3
Week 4, Sep 17	Azimuthal projections Topographic maps: introduction	H2, D2
Week 5, Sep 24	Topographic maps (cont.): coordinates and elevations	H3, Q4
Week 6, Oct 1	Web GIS, ArcGIS Online	H4
Week 7, Oct 8	Homecoming - No classes	
Week 8, Oct 15	Introduction to HTML	H5
Week 9, Oct 22	Introduction to JavaScript	H6
Week 10, Oct 29	Web mapping: Protocols and standards	H7
Week 11, Nov 5	Web mapping (cont.): JavaScript libraries	H8
Week 12, Nov 12	Lidar principles, data collection and analysis FUSION software and ESRI plugins	H9 (part 1), D3, Q5
Week 13, Nov 19	Lidar in Global Mapper Terrain analysis techniques and visualization	H9 (part 2)
Week 14, Nov 26	Thanksgiving - No classes	
Week 15, Dec 3	Coordinate transformations	H10, Q6
Week 16, Dec 10	Reading Day - No classes	

D: Discussion, Q: Quiz, H: Home assignment

5. POLICIES AND REQUIREMENTS

This syllabus represents current plans and objectives for this course. As the semester progresses, changes may need to be made to accommodate timing, logistics, or to enhance learning. Such changes, communicated clearly, are not unusual and should be expected.

Late submissions and make-up requests:

It is the responsibility of the student to access online lectures, readings, quizzes, and exams and to maintain satisfactory progress in the course.

- A 10% penalty per day will be applied to late assignments. A late submission on the due date also results in a 10% deduction.
- Assignments will not be accepted if handed in more than seven days after the due date.
- Quizzes cannot be taken past the deadline.
- Online discussions cannot be completed past the deadline.
- Exceptions to the late policy are only allowed per university policy.

Computer or other hardware failures, except failure of the UF canvas system, will not excuse students for missing assignments. Any late submissions due to technical issues MUST be accompanied by the ticket number received from the Helpdesk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request consideration. For computer, software compatibility, or access problems call the HELP DESK phone number—352-392-HELP = 352- 392-4357 (option 2).

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

Semester Evaluation Process:

Student assessment of instruction is an important part of efforts to improve teaching and learning.

At approximately the mid-point of the semester, the School of Forest Resources & Conservation will request anonymous feedback on student satisfaction on various aspects of this course. These surveys will be sent out through Canvas and are not required, but encouraged. This is not the UF Faculty Evaluation!

At the end of the semester, 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/>.

Netiquette: Communication Courtesy Semester Evaluation Process:

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats, as laid out in the [UF Netiquette Guide](#) for Online Courses. Failure to do so may result in loss of participation points and/or referral to the Dean of Students' Office.

Academic Honesty Policy:

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 or 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>
View [this video](#) for more information on how to avoid plagiarism.

University Policy on Accommodating Students with Disabilities:

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center. Click [here](#) to get started with the Disability Resource Center. 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.

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.

Class recordings:

Policies regarding student in-class recordings and publishing them are detailed here: <http://aa.ufl.edu/policies/in-class-recording/>

6. CAMPUS RESOURCES**Academic Resources:**

- For issues with technical difficulties for e-learning in Canvas, please post your question to the Technical Help Discussion in your course, or contact the UF Help Desk at:
Learning-support@ufl.edu | (352) 392-HELP - select option 2 | <http://elearning.ufl.edu> | <https://helpdesk.ufl.edu/>
- SFFGS Academic Hub <https://ufl.instructure.com/courses/303721>
- [Career Connections Center](#): Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

- [Library Support](#): Various ways to receive assistance with respect to using the libraries or finding resources.
- [Teaching Center](#): Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.
- [Writing Studio](#): 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.
- Student Complaints On-Campus: [Visit the Student Honor Code and Student Conduct Code webpage for more information.](#)
- On-Line Students Complaints: [View the Distance Learning Student Complaint Process.](#)

Health and Wellness:

- *U Matter, We Care*: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.
- *Counseling and Wellness Center*: [Visit the Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.
- *Student Health Care Center*: Call 352-392-1161 for 24/7 information to help you find the care you need, or [visit the Student Health Care Center website](#).
- *University Police Department*: [Visit UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).
- Career Resource Center <http://www.crc.ufl.edu/>
- GatorWell Health Promotion Services <https://gatorwell.ufsa.ufl.edu/>