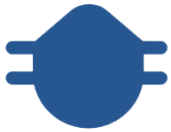


SUR 3331C
Advanced Photogrammetry
Spring 2022 Syllabus

Spring 2022 Important Information

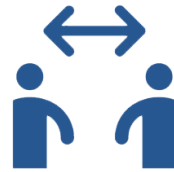
This course will be conducted in a hybrid format that includes some face-to-face sessions. During all face-to-face activities, the following public health and safety protocols are strongly encouraged for all students, instructors, and teaching assistants:



Bring and wear a face mask at all times when indoors.



Wash hands (>20 sec) before and after class.



Maintain at least 6ft of distance from others.



If you feel sick or have symptoms, stay home.

If you are experiencing [COVID-19 symptoms](#) please use the UF Health screening system and follow the instructions on [whether you are able to attend class](#). Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work.

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*****COVID SAFETY PLAN*****

When in the computer room it is strongly encouraged that:

- *Students use the same workstation and stereo-glasses for the labs.*
- *Students wear face masks (over mouth and nose) at all times.*
- *Strict 6-foot minimum social distancing be maintained at all times, including when entering and leaving the lab.*
- *Students sanitize the workstation and surrounding work area before and after each use.*

*****RECORDED MATERIAL*****

Class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

SUR 3331C
Photogrammetry
Spring 2022 Syllabus

INSTRUCTOR: Dr. Ben Wilkinson
Office: 406A Reed Lab
Phone: (352) 392-3465
Email: benew@ufl.edu

MEETING TIMES: Lectures T, F 5th period (11:45-12:35)
Labs T 6th period (12:50-1:40)

OFFICE HOURS: Web conferencing by appointment

TEXTBOOK: Wolf, P.R., B.A. Dewitt, B.E. Wilkinson Elements of Photogrammetry: with Applications in GIS, 4th Ed., McGraw-Hill, 2014.

PREREQUISITES: SUR3103C

GOALS AND OBJECTIVES:

Photogrammetry relates the principles of precise measurement and proper data reduction through measurements of photographs followed by calculations to determine spatial information. This course covers elementary techniques of photogrammetry, establishing the foundation for the subsequent, advanced photogrammetry course, SUR4350C. The course objective is to provide students with a thorough understanding of (1) the principles of photography, (2) image measurement techniques, (3) the mathematical procedures to derive ground coordinates from these measurements, (4) the error budget associated with various measurement techniques, and (5) photogrammetric project planning.

At the completion of the course, the student should be able to:

- determine dimensional characteristics of digital images
- conduct precise photographic measurements of photo coordinates
- determine flight and object heights from vertical photographs
- use photogrammetric software and concepts of analytical photogrammetry to determine ground coordinates
- complete planimetric mapping tasks by heads up digitizing
- develop a flight plan and estimation of cost for photogrammetric mapping projects

LOGISTICS: Students may access lectures, assignments, readings, and supporting materials through the course Canvas site as they become available. **Online Gainesville section students are required to attend web conference lectures synchronously.**

Technology Requirements:

- A computer or mobile device with high-speed internet connection.
- 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. [What browser am I using?](#)
- Installation of proctoring software may be required and will be provided if so.

Synchronous online sessions will 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.

COURSE GRADING*: The course grade will be based on participation, labs, reading assignment quizzes, and three exams. The percentage breakdown is as follows (subject to change based on course progression). Final grades are based on a curve.

Homework: 15%, Labs: 30%, EXAM I**: 15%, EXAM II**: 15%, EXAM III**: 20%
Attendance: 5% (e.g. ad hoc surveys, message board assignments)

A	94 -100	C	73 - 76.99
A-	90 - 93.99	C-	70 - 72.99
B+	87 - 89.99	D+	67 - 69.99
B	83 - 86.99	D	63 - 66.99
B-	80 - 82.99	D-	60 - 62.99
C+	77 - 79.99	E	0 - 59.99

*Final Grades May be Curved

****Exams must be taken during class time. Plan now so that these time blocks are available. The schedule below has Exam days/times.**

Week #	Lecture	Lab	Reading
Week 1 Friday 1/7/2022	Introduction	n/a	n/a
Week 2 Tuesday 1/11/2022	Units, errors, significant figures	L1: Vision	Ch. 1;
Friday 1/14/2022	Optics for photogrammetry		Ch. 2-1:3

Week 3				
Tuesday	1/18/2022	Principles of photography	L2: Significant figures – statistics exercise	Appendix A
Friday	1/21/2022	Digital images		
Week 4				
Tuesday	1/25/2022	Aerial cameras	L3: Digital images	Ch. 3-1:8 Ch. 3-9:14, 4-1:6
Friday	1/28/2022	Camera calibration & photo measurements		
Week 5				
Tuesday	2/1/2022	Photo coordinate refinement	L4: Fundamental photo measurements	Ch. 4-7:14 Ch. 6-1:6
Friday	2/4/2022	Vertical photos		
Week 6				
Tuesday	2/8/2022	Vertical photos	L5: Scale and flying height of a vertical photo	Ch. 6-7:10
Friday	2/11/2022	Exam 1		
Week 7				
Tuesday	2/15/2022	Stereoscopic Viewing	L6: Relief displacement of a vertical photo	Ch. 7 Ch. 8-1:6
Friday	2/18/2022	Stereoscopic parallax		
Week 8				
Tuesday	2/22/2022	Stereoscopic parallax	L7: Introduction to stereo viewing	Ch. 8-7:11 Ch. 5
Friday	2/25/2022	Object space coordinate systems		
Week 9				
Tuesday	3/1/2022	Georeferencing and Mosaics	L8: Parallax measurement	Ch. 9 Ch. 10-1:5
Friday	3/4/2022	Tilted photos		
Week 10				
Tuesday	3/8/2022	Spring Break		
Friday	3/11/2022	Spring Break		

Week 11				
Tuesday	3/15/2022	Stereoscopic plotting instruments: Introduction	L9-10 Softcopy Stereoplotter	Ch. 12-1:18
Friday	3/18/2022	Softcopy Plotters		
Week 12				
Tuesday	3/22/2022	Field Trip	L9-10 Softcopy Stereoplotter (continued)	
Friday	3/25/2022	Exam 2		
Week 13				
Tuesday	3/29/2022	Topographic Mapping and Spatial Data Collection	none	Ch. 13
Friday	4/1/2022	Project planning		Ch. 18-1:7
Week 14				
Tuesday	4/5/2022	Project planning	L11-12: Flight planning and cost estimation	Ch. 18-8:12
Friday	4/8/2022	Introduction to lidar		
Week 15				
Tuesday	4/12/2022	Lidar	L11-12: Flight planning and cost estimation (continued)	Ch. 14
Friday	4/15/2022	Bathymetric and Geiger Mode Lidar		
Week 16				
Tuesday	4/19/2022	Exam 3		

*Lecture and Lab Schedule Subject to Change.

LATE POLICY: Due dates will be announced when assignments are given. A deduction of 10% will be made for each day late. It is the responsibility of the student to access on-line lectures, readings, quizzes, and exams and to maintain satisfactory progress in the course. 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/ugrad/current/regulations/info/attendance.aspx>

Computer or other hardware failures, except failure of the UF e-Learning 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).

COMMUNICATION COURTESY AND PROFESSIONALISM: Just as in any professional environment, meaningful and constructive dialogue is expected in this class and requires a degree of mutual respect, willingness to listen, and tolerance of opposing points of view. Respect for individual differences and alternative viewpoints will be maintained in this class at all times. All members of the class are expected to follow rules of common courtesy, decency, and civility in all interactions. Failure to do so will not be tolerated and may result in loss of participation points and/or referral to the Dean of Students' Office.

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/>.

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>.

INCLUSIVE LEARNING ENVIRONMENT: This course embraces the University of Florida's Non-Discrimination Policy, which reads,

The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to 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 as protected under the Vietnam Era Veterans' Readjustment Assistance Act.

If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see the instructor or refer to the Office of Multicultural & Diversity Affairs website: <http://multicultural.ufl.edu>.

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, www.dso.ufl.edu/drc/

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.

CAMPUS HELPING 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>
- Library Help Desk support <http://cms.uflib.ufl.edu/ask>
- SFRC Academic Hub <https://ufl.instructure.com/courses/303721>

STUDENT LIFE, WELLNESS, AND COUNSELING HELP: 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.

- Counseling and Wellness resources <http://www.counseling.ufl.edu/cwc/>
- U Matter, We Care <http://www.umatter.ufl.edu/>
- Career Connections Center <http://career.ufl.edu/>
- Other resources are available at <http://www.distance.ufl.edu/getting-help> for online students.

STUDENT COMPLAINT PROCESS: The School of Forest Resources & Conservation cares about your experience and we will make every effort to address course concerns. We request that all of our online students complete a course satisfaction survey each semester, which is a time for you to voice your thoughts on how your course is being delivered.

If you have a more urgent concern, your first point of contact should be the SFRC Academic Coordinator or the Graduate/Undergraduate Coordinator for the program offering the course. You may also submit a complaint directly to UF administration:

- Students in online courses: <http://www.distance.ufl.edu/student-complaint-process>
- Students in face-to-face courses: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>