

SUR 4350C
Advanced Photogrammetry
Fall 2017 Syllabus

INSTRUCTOR: Ben Wilkinson
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TEACHING ASSISTANT:
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MEETING TIMES: Lectures T, R 5th period (11:45-12:35),
Labs R 8-10 period (3:00-6:00)

OFFICE HOURS: Open door, by appointment

TEXTBOOK: Wolf, P.R., B.A. Dewitt, B.E. Wilkinson Elements of Photogrammetry: with Applications in GIS, 3rd Ed., McGraw-Hill, 2014.

COURSE GRADING: The course grade will be based on labs, HW assignments, and three exams. The percentage breakdown is as follows:

Presentations:	15%
EXAM I:	15%
EXAM II:	15%
EXAM III:	20%
Labs:	35%

(Final grades are based on a curve)

LATE POLICY: Due dates will be announced when homework/lab assignments are given. A deduction of 25% will be made for each day it is late.

GOALS AND OBJECTIVES: This course relates the principles of precise measurement and proper data reduction through measurements of photographs followed by calculations to determine spatial information. After completing this course, the student should be familiar with methods commonly used in photogrammetric practice as well as the theoretical basis for these methods.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES: "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."

HONESTY POLICY: All students are required to abide by the Academic Honesty Guidelines that have been accepted by the University.
www.dso.ufl.edu/studentguide/studentrights.php

MODULES: The course will cover ten main modules:

Module	~No. Lec	Topics
1	1	Introduction
2	1	3D angles and angular conversion
3	3	2D Coordinate transformations
4	2	3D Conformal coordinate transformation
5	1	Homogeneous coordinate representation
6	4	Collinearity , space resection, space intersection, relative orientation, analytical stereomodel
7	4	Aerotriangulation - Independent Models, bundle adjustment, self-calibration, airborne control
8	4	Digital photogrammetry - Modulation transfer, image model, spatial frequency, resampling, softcopy, image matching, orthophoto generation, digital mapping cameras, ASPRS accuracy standards
9	3	Lidar
10	1	Computer Vision , UAS Photogrammetry,

LABS: There will be seven labs assigned in:

LAB	TOPIC
1	3D Rotations, Omega-Phi-Kappa – Tilt-Swing-Azimuth Conversion
2	2D Coordinate Transformations – Rectification
3	3D Transformation – Terrestrial Lidar (Two Weeks)
4	Space Resection
5	Softcopy Stereoplotter Operations (Two Weeks)
6	Simultaneous Bundle Adjustment (Two Weeks)
7	Close Range Photogrammetry/Analytical self-calibration (1 ½ Weeks)
8	Digital Terrain Models/Digital Orthophotos (Bonus)

Monday	Tuesday	Wednesday	Thursday	Friday
8/21	8/22 Intro	8/23	8/24 No Lab	8/25
8/28	8/29	8/30	8/31 Lab 1	9/1
9/4	9/5	9/6	9/7 Lab 2	9/8
9/11	9/12	9/13	9/14 Lab 3	9/15
9/18	9/19	9/20	9/21 Presentations	9/22
9/25	9/26	9/27	9/28 Exam 1	9/29
10/2	10/3	10/4	10/5 Lab 4	10/6 Homecoming
10/9	10/10	10/11	10/12 Lab 5	10/13
10/16	10/17	10/18	10/19 Lab 5 (cont)	10/20
10/23	10/24	10/25	10/26 Presentations	10/27
10/30	10/31	11/1	11/2 Exam 2	11/3
11/6	11/7	11/8	11/9 Lab 6	11/10 Veteran's Day
11/13	11/14	11/15	11/16 Lab 7	11/17
11/20	11/21	11/22 Thanksgiving	11/23 Thanksgiving	11/24 Thanksgiving
11/27	11/28	11/29	11/30 Exam 3	12/1
12/4	12/5	12/6	12/7 Reading Day	12/8 Reading Day
12/11	12/12	12/13	12/14	12/15