

 FLORIDA ATLANTIC UNIVERSITY	COURSE CHANGE REQUEST Undergraduate Programs		UUPC Approval <u>9/8/25</u> UFS Approval _____ SCNS Submittal _____ Confirmed _____ Banner Posted _____ Catalog _____
	Department _____ College _____		
Current Course Prefix and Number		Current Course Title	
Syllabus must be attached for ANY changes to current course details. See Template . Please consult and list departments that may be affected by the changes; attach documentation.			
Change title to: Change prefix From: _____ To: _____ Change course number From: _____ To: _____ Change credits* From: _____ To: _____ Change grading From: _____ To: _____ Change WAC/Gordon Rule status** Add _____ Remove _____ Change General Education Requirements*** Add _____ Remove _____ <small>*See Definition of a Credit Hour.</small> <small>**WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to this form. See WAC Guidelines.</small> <small>***GE criteria must be indicated in syllabus and approval attached to this form. See Intellectual Foundations Guidelines.</small>		Change description to: Change prerequisites/minimum grades to: Change corequisites to: Change registration controls to: Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade (default is D-).	
Effective Term/Year for Changes:		Terminate course? Effective Term/Year for Termination:	
Faculty Contact/Email/Phone			
Approved by		Date	
Department Chair _____ <i>ckaiser</i>		<u>8/28/25</u>	
College Curriculum Chair _____ <i>Gylan Liu</i>		<u>8/28/25</u>	
College Dean _____ <i>Korey Sorge</i>		<u>9/8/25</u>	
UUPC Chair _____ <i>Dan Meeroff</i>		<u>9/8/25</u>	
Undergraduate Studies Dean _____		_____	
UFS President _____		_____	
Provost _____		_____	

Email this form and syllabus to mjenning@fau.edu seven business days before the UUPC meeting.



FLORIDA ATLANTIC UNIVERSITY

SUR 4530C

Geodesy and Geodetic Positioning

Date: Monday 4:00 PM - 5:50 PM

Building: Fleming Hall Boca **Room:** 424

3 Credit(s)

Spring 2026 - 1 Full Term

Instructor Information

Sudhagar Nagarajan

Email: snagarajan@fau.edu

Office: EG-36, # 206

Office Hours: MT 2:00 pm - 3:00 pm

Phone: 561-297-3104

TA Name:

Office:

Office Hours:

Telephone:

Email:

Course Description

Geodesy and Geodetic Positioning

Prerequisites: SUR 3141 and SUR 3141L or SUR 3141C with minimum grades of "C"

Corequisite:

Concepts of geodesy, ellipsoidal geometry, geodetic coordinates, gravity, datums, satellite orbits and practical applications of GPS data collection, post-processing and adjusting networks.

Instructional Method

In-Person

Traditional concept of in person. Mandatory attendance is at the discretion of the instructor.

Required Texts/Materials

GPS for Land Surveyors (w/Bind-In Access)

ISBN: 9781466583108

Publisher: Routledge

Edition: 4th

Course Objectives/Student Learning Outcomes

1A. Ability to perform geodetic transformations

1B. Ability to compute coordinates of receiver using GNSS Pseudorange observations

1C. Ability to understand the working principle of GNSS positioning

1D. Ability to understand horizontal, vertical datums and map projections and perform basic computations

3A. Ability to prepare maps and reports based on the GNSS data collected

6A. Ability to plan (e.g. location and time window) and perform appropriate GNSS data collection technique for the required precision of the survey

6B. Ability to identify the sources of errors in GNSS observations and identify methods to determine, eliminate or minimize them

Faculty Rights and Responsibilities

Florida Atlantic University respects the rights of instructors to teach and students to learn. Maintenance of these rights requires classroom conditions that do not impede their exercise. To ensure these rights, faculty members have the prerogative to:

- Establish and implement academic standards.
- Establish and enforce reasonable behavior standards in each class.
- Recommend disciplinary action for students whose behavior may be judged as disruptive under the Student Code of Conduct [University Regulation 4.007](#).

Disability Policy

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all campuses. For more information, please visit the SAS website at www.fau.edu/sas/.

Course Evaluation Method

Lab exercises and exam: 30%

Midterm exam 1: 20%

Midterm exam 2: 20%

Final exam: 30%

Code of Academic Integrity

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see [University Regulation 4.001](#).

Attendance Policy Statement

Students are expected to attend all their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations, or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances, and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance.

Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

Religious Accommodation Policy Statement

In accordance with the rules of the Florida Board of Education and Florida law, students have the right to reasonable accommodations from the University in order to observe religious practices and beliefs regarding admissions, registration, class attendance, and the scheduling of examinations and work assignments. University Regulation 2.007, Religious Observances, sets forth this policy for FAU and may be accessed on the FAU website at www.fau.edu/regulations.

Any student who feels aggrieved regarding religious accommodations may present a grievance to the executive director of The Office of Civil Rights and Title IX. Any such grievances will follow Florida Atlantic University's established grievance procedure regarding alleged discrimination.

Time Commitment Per Credit Hour

For traditionally delivered courses, not less than one (1) hour of classroom or direct faculty instruction each week for fifteen (15) weeks per Fall or Spring semester, and a minimum of two (2) hours of out-of-class student work for each credit hour. Equivalent time and effort are required for Summer Semesters, which usually have a shortened timeframe. Fully Online courses, hybrid, shortened, intensive format courses, and other non-traditional modes of delivery will demonstrate equivalent time and effort.

Course Grading Scale

Letter Grade	Letter Grade
A	94 - 100%
A-	90 - 93%
B+	87 - 89%
B	83 - 86%
B-	80 - 82%
C+	77 - 79%
C	73 - 76%
C-	70 - 72%
D+	67 - 69%
D	63 - 66%
D-	60 - 62%
F	Below 60

Note that you will get the same grade for the co-requisites SUR 4530 and SUR 4530 L

Grade Appeal Process

You may request a review of the final course grade when you believe that one of the following conditions apply:

- There was a computational or recording error in the grading.
- The grading process used non-academic criteria.
- There was a gross violation of the instructor's own grading system.

[University Regulation 4.002](#) of the University Regulations contains information on the grade appeals process

Policy on Make-up Tests, Late work, and Incompletes

1. Exams will be given only at the scheduled times and places, unless previous arrangements have been made no less than one (1) full week in advance. No one is exempt from exams.
2. Makeups are given only if there is solid evidence of a medical or otherwise serious emergency that prevented the student of participating in the exam. Makeup exams will be administered and proctored by department personnel unless there are other pre-approved arrangements.
3. Late work is not acceptable.
4. Incomplete grades are against the policy of the department. Unless there is solid evidence of medical or otherwise serious emergency situation, incomplete grades will not be given. Note: Incomplete grades are only reserved for those students who were passing but could not complete the required work due to exceptional circumstances.

Policy on the Recording of Lectures

Students enrolled in this course may record video or audio of class lectures for their own personal educational use. A class lecture is defined as a formal or methodical oral presentation as part of a university course intended to present information or teach students about a particular subject. Recording class activities other than class lectures, including but not limited to student presentations (whether individually or as part of a group), class discussion (except when incidental to and incorporated within a class lecture), labs, clinical presentations such as patient history, academic exercises involving student participation, test or examination administrations, field trips, and private conversations between students in the class or between a student and the lecturer, is prohibited. Recordings may not be used as a substitute for class participation or class attendance and may not be published or shared without the written consent of the faculty member. Failure to adhere to these requirements may constitute a violation of the University's Student Code of Conduct and/or the Code of Academic Integrity.

Artificial Intelligence Preamble

FAU recognizes the value of generative AI in facilitating learning. However, output generated by artificial intelligence (AI), such as written words, computations, code, artwork, images, music, etc., for example, is drawn from previously published materials and is not your own original work.

FAU students are not permitted to use AI for any course work unless explicitly allowed to do so by the instructor of the class for a specific assignment. [\[Policy 12.16 Artificial Intelligence\]](#)

Class policies related to AI use are decided by the individual faculty. Some faculty may permit the use of AI in some assignments but not others, and some faculty may prohibit the use of AI in their course entirely. In the case that an instructor permits the use of AI for some assignments, the assignment instructions will indicate when and how the use of AI is permitted in that specific assignment. It is the student's responsibility to comply with the instructor's expectations for each assignment in each course. When AI is authorized, the student is also responsible and accountable for the content of the work. AI may generate inaccurate, false, or exaggerated information. Users should approach any generated content with skepticism and review any information generated by AI before using generated content as-is.

If you are unclear about whether or not the use of AI is permitted, ask your instructor before starting the assignment.

Failure to comply with the requirements related to the use of AI may constitute a violation of the [Florida Atlantic Code of Academic Integrity, Regulation 4.001.](#)

Proper Citation: If the use of AI is permitted for a specific assignment, then use of the AI tool must be properly documented and cited. For more information on how to properly cite the use of AI tools, visit <https://fau.edu/ai/citation>

Counseling and Psychological Services (CAPS) Center

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual therapy, group therapy, and crisis services, to name a few - offered to help improve and maintain emotional well-being. For more information, go to <http://www.fau.edu/counseling/>

Student Support Services and Online Resources

- ♦ [Center for Learning and Student Success \(CLASS\)](#)
- ♦ [Counseling and Psychological Services \(CAPS\)](#)
- ♦ [FAU Libraries](#)
- ♦ [Math Learning Center](#)
- ♦ [Office of Information Technology Helpdesk](#)
- ♦ [Center for Global Engagement](#)
- ♦ [Office of Undergraduate Research and Inquiry \(OURI\)](#)
- ♦ [Science Learning Center](#)

- [Speaking Center](#)
- [Student Accessibility Services](#)
- [Student Athlete Success Center \(SASC\)](#)
- [Testing and Certification](#)
- [Test Preparation](#)
- [University Academic Advising Services](#)
- [University Center for Excellence in Writing \(UCEW\)](#)
- [Writing Across the Curriculum \(WAC\)](#)

Course Topical Outline

Week 1: Introduction, what is GNSS?

Week 2: GPS signal structure

Week 3: No classes, MLK Jr Day

Week 4: GPS Biases and Solutions

Week 5: GPS framework

Week 6: Midterm Exam 1 - 02/10/2025

Week 7: GPS Surveying Techniques

Week 8: Observing and Processing

Week 9: Spring Break

Week 10: Geodesy and Geodetic Datums

Week 11: Geodesy and Geodetic Datums

Week 12: Midterm Exam 2 03/24/2025

Week 13: State Plane Coordinates

Week 14: GPS Modernization

Week 15: Other satellite navigation systems

Week 16: Online GPS processing services

Final Exam: M (Apr 28) 4:00pm - 6:30pm

Lab Exercises

1/25/2025- Introduction to GNSS positioning: Getting started with GNSS receivers

2/1/2025- Map Generation with ArcGIS

2/15/2025 - Real Time Kinematic Survey

3/15/2025 – Radio Based Real Time Kinematic Survey

4/12/2025 – Static data processing

Title IX Statement

In any case involving allegations of sexual misconduct, you are encouraged to report the matter to the University Title IX Coordinator in the Office of Civil Rights and Title IX (OCR9). If University faculty become aware of an allegation of sexual misconduct, they are expected to report it to OCR9. If a report is made, someone from OCR9 and/or Campus Victim Services will contact you to make you aware of available resources including support services, supportive measures, and the University's grievance procedures. More information, including contact information for OCR9, is available at <https://www.fau.edu/ocr9/title-ix/>. You may also contact Victim Services at victimservices@fau.edu or 561-297-0500 (ask to speak to an Advocate) or schedule an appointment with a counselor at Counseling and Psychological Services (CAPS) by calling 561-297-CAPS.