

**Department of Civil Environmental and Geomatics Engineering
Florida Atlantic University
Course Syllabus**

1. Course title/number, number of credit hours	
Geomatics and Geomatics Lab (SUR 3103/SUR 3103L)	2/1 credit hours
2. Course prerequisites, corequisites, and where the course fits in the program of study	
<i>Prerequisites:</i> MAC 1147, or MAC 2210, or both MAC 1140 and MAC 1114, or MAC2311, with minimum grade of "C" <i>Co-requisite:</i> Geomatics Lab SUR 3103L	
3. Course logistics	
<i>Semester:</i> Spring 2019 <i>Class location and time:</i> F: 8:00-9:50 am IS 113 (Lecture) F: 10:00-10:50 am IS 113 (Lab)	
Advance notice may be given for quizzes. No make-up quiz given.	
4. Instructor contact information	
Olfat Sarhang Zadeh Engineering West, Room 212 ozadeh@fau.edu p: 561.297.3090 Office hours: T/R 10:30 am-12:30 pm	
5. TA contact information	
<i>TA's name</i> Prakash Arvan Engineering West, Room 230 c <i>Office address</i> M 2:00pm-5:00 pm <i>Email address</i> parvan2018@fau.edu	
6. Course description	
Concepts, theory and applications of basic measurement methods used in geospatial data acquisition, such as distance, direction and angle measurements, traverse computation, leveling and height determination, trigonometric leveling, topographic surveying, horizontal and vertical curves, terrestrial positioning using GPS. Labs synchronized with the lectures.	
7. Course objectives/student learning outcomes/program outcomes	
<i>Course objectives</i>	The course provides an overview of fundamentals of graphical and measurement analysis, basic surveying concepts, and introduction to global positioning system.
<i>ABET 1-7 outcomes</i>	<ol style="list-style-type: none"> 1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics 2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors 3. an ability to communicate effectively with a range of audiences 4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact

**Department of Civil Environmental and Geomatics Engineering
Florida Atlantic University**

Course Syllabus

	<p>of engineering solutions in global, economic, environmental, and societal contexts</p> <ol style="list-style-type: none"> 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 6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions 7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies
<p><i>Student learning outcomes & relationship to ABET a-k objectives</i></p>	<ol style="list-style-type: none"> 1. Ability to understand distance and angle measurements (1,3,5, 6) 2. Ability to run a leveling traverse (1, 3, 5,6) 3. Ability to perform a topographic survey and understand the basics of GPS (1,3, 5, 6) 4. Ability to design and lay out a horizontal curve, vertical curve and volume computations (1,3,5,6)
<p><i>Relationship to program outcomes</i></p>	<p>Outcome 1: An understanding of professional and ethical responsibility (High)</p> <p>Outcome 2: A working knowledge of fundamentals, engineering tools, and experimental methodologies (High)</p> <p>Outcome 3: An understanding of the social, economic, and political contexts in which engineers must function (Medium)</p> <p>Outcome 4: An ability to plan and execute an engineering design to meet an identified need (Medium)</p> <p>Outcome 5: An ability to function on multi-disciplinary teams (Medium)</p> <p>Outcome 6: An ability to communicate effectively (Medium)</p> <p>Outcome 7: Graduates will have proficiency in the following areas of civil engineering: (i) structural engineering, (ii) transportation engineering, (iii) geotechnical engineering, (iv) water resources, and (v) environmental engineering (High)</p> <p>Outcome 8: Graduates will have an adequate appreciation for the role of civil engineering in infrastructure planning and sustainability including safety, risk assessment, and hazard mitigation (High)</p> <p>Outcome 9: Graduates will be successful in finding professional employment and/or pursuing further academic studies (High)</p>
<p>8. Course evaluation method</p>	
<p>Lab reports: 30% Homeworks and Quizzes: 30% Mid-Term: 20% Final exam: 20%</p> <p>* As can be seen with the contribution of lab reports to overall grade, these reports will be the integral part of this course. As such, reports will include all the measurements, methods, analysis, results, drawings etc. for all the scheduled lab activities.</p>	
<p>9. Course grading scale</p>	

**Department of Civil Environmental and Geomatics Engineering
Florida Atlantic University
Course Syllabus**

To succeed in this class:
Fully completed field book must be handed in.
Fully completed lab reports (all of them) must be handed in.
Fully completed Homeworks must be handed in.
Quizzes and Exams must be completed.
Final exams must be taken.

90-100	A	88-89	A-	86-87	B+
80-85	B	78-79	B-	76-77	C+
70-75	C	68-69	C-	66-67	D+
60-65	D	58-59	D-	0- 58	F

Note: The minimum grade required to pass the course is C.

10. Policy on makeup tests, late work, and incompletes

Makeup tests 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 exam should be administered and proctored by department personnel unless there are other pre-approved arrangements.

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.

11. Special course requirements

Unless there is a legitimate reason, full attendance to the labs is required. For this purpose an attendee list will be kept. To claim presence you must be in lab from the beginning to the end. Absence from labs must be documented. Otherwise, you will lose the grade for that particular week.

Lab report for each activity must be finalized and handed in on the due date. These must be handed in by the beginning of the class time. Late submissions will **NOT** be graded.

12. Classroom etiquette policy

University policy requires that in order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular phones and laptops, are to be disabled in class sessions.

13. Attendance Policy Statement

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 3 without any reduction in the student's final course grade as a direct result of such absence.

14. Disability policy statement

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/.

15. Counseling and Psychological Services (CAPS) Center

**Department of Civil Environmental and Geomatics Engineering
Florida Atlantic University
Course Syllabus**

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 counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to <http://www.fau.edu/counseling/>.

16. Code of Academic Integrity policy statement

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](#). If your college has particular policies relating to cheating and plagiarism, state so here or provide a link to the full policy—but be sure the college policy does not conflict with the University Regulation.

17. Required texts/reading

Charles D. Ghilani and Paul R. Wolf, (2017). "Elementary Surveying: An Introduction to Geomatics", 15th Edition, Pearson Prentice Hall, New Jersey.

18. Supplementary/recommended readings

Kavanagh, B. F., (2006). "Surveying: Principles and Applications", 7th edition, Pearson Prentice Hall, New Jersey.
Surveying/ Jack C. McCormac, Wayne Sarasua, William Davis. -6th ed.

19. Other

1. College of Engineering and Computer Science (COECS) Technology Services Group (TSG)

TSG provides support for students with issues related to the use of College computing resources such as lamp.cse.fau.edu, the student web server, and GENIE, the Citrix Remote Application Server. TSG also supports the Microsoft Developer Network Academic Alliance portal through which students taking courses in CEECS can obtain free copies of many software products from Microsoft. Details of these and other resources are described on the TSG web site at tsg.eng.fau.edu.

For support issues not covered on the web site students must send email to help@eng.fau.edu. TSG responds to help requests only through this email address. Do not attempt to phone them or contact them personally. TSG support is limited to assistance with COECS computing resources such as having your password on lamp reset. They do not handle specific course related questions. Those should be directed to the instructor for the course.

2. FAU Information Resource Management (IRM)

RM provides support for general computing and network issues at FAU. General information and many resources can be found on the IRM site, www.fau.edu/irm/index.php. IRM provides direct student through an online Help Desk at www.fau.edu/helpdesk/. The help desk includes extensive online support resources and a "Ticket" submission system for support requests. Areas of particular concern to students in this course covered by the Help Desk include general Blackboard, FAU Net ID and network login, and FAU Google Email. The Help Desk can also be accessed by phone at (561) 297-3999. Phone access should generally be used only if you are unable to log in to FAU systems. For most other issues the phone consultant will simply record your concern and submit a help ticket on your behalf. The help ticket will get the same treatment as one you submit directly.

3. College of Engineering and Computer Science (COECS) Division of Engineering Student Services (ESS)

**Department of Civil Environmental and Geomatics Engineering
Florida Atlantic University
Course Syllabus**

ESS provides general advising and academic support for students in COECS including free tutoring support for all students in computer science courses. Additional information can be found on their web page at www.eng.fau.edu/engineering-student-services.

4. FAU University Center for Excellence in Writing (UCEW)

The UCEW, sometimes referred to simply as the Writing Center, provides assistance to students with writing assignments through consultants. They can assess student writing skills and suggest approaches to dealing with problem areas. The center web site is at www.fau.edu/UCEW/WC.

20. Course topical outline, including dates for exams/quizzes, papers, completion of reading

Date	Topic
1/11/2019	Week 1: Introduction, What is Surveying/Geomatics?HW#1
1/18/2019	Week 2: Distance measurements, HW#2
1/25/2019	Week 3: Lab 1: Initial job site inspection; set survey stations; pacing and taping.
2/1/2019	Week 4: Angle measurements, HW#3
2/8/2019	Week 5: Traverse computations, HW#4
2/15/2019	Week 6: Lab 2: Traverse field measurements
2/22/2019	Week 7: Mid-Term
3/1/2019	Week 8: Leveling, Trigonometric leveling, HW#5
3/8/2019	Week 9: No class/Spring Break
3/15/2019	Week 10: Lab 3: Leveling field measurements
3/22/2019	Week 11: Lab 4: Trigonometric Surveying
3/29/2019	Week 12: Curve computations, HW#6
4/5/2019	Week 13: Satellite positioning, Area and Volume Computations, HW#7 & HW#8
4/12/2019	Week 14: Lab 5 : GPS survey, Topographic surveying
4/19/2019	Week 15: Review
4/26/2019	Week 16: Final Exam (7:45am - 10:15am)