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| **1. Course title/number, number of credit hours** |
| Engineering and Construction Surveying (SUR3205) and Engineering and Construction Surveying Lab (SUR3205L) | 3 credit hours (2 credit hours for lectures and 1 credit hour for Lab) |
| **2. Course prerequisites, corequisites, and where the course fits in the program of study** |
| Prerequisite: SUR 3141 – Automated Surveying and Mapping (2-credits) AND SUR3141L-Automated Surveying and Mapping Lab (1-credit) with a minimum grade of “C”Corequisite: SUR3205-Engineering and Construction (2-credit) and SUR 3205L-Engineering and Construction Surveying Lab (1-credit) are corequisites of each other. |
| **3. Course logistics** |
| *Semester*: Fall 2015This is a live, on-line 2-credit lecture course with companion in person 1-credit labClass time: Monday, 7PM – 10PM |
| **4. Instructor contact information** |
| TBA |
| **5. Course description** |
| Surveying applications for engineering, construction, and transportation work. Route surveying and geometric design; topographic site surveys and mapping; earthwork computations. |
| **6. Course objectives/student learning outcomes/program outcomes** |
| *Course objectives* | The course provides discussions of new technology and the new methods that are being used in the field of construction surveying and layout. In this regard, the focus will be on fieldwork practices, precise angle and distance measurements, traverse computations, various leveling techniques, curve computations, layout techniques and construction control. |
| *Student learning outcomes**& relationship to ABET a-k objectives* | 1. Understand the function of surveying in construction (a, c, f, g, k)2. Be capable of utilizing surveying equipment and surveying techniques in construction (a, e, k)3. Comprehend the field and office procedures for precise work in engineering surveying and construction (a, b, e, k)4. Be able to lay out a curve and transition spiral and perform cut and fill calculations (a, b, e, k)5. Be able to apply layout techniques and perform construction control (a, b, e, k) |
| *Relationship to Geomatics Engineering educational objectives* | **Objective A: Practice geomatics engineering** within the general areas of boundary and land surveying, geographic information systems (GIS), photogrammetry, remote sensing, mapping, geodesy, and global navigation satellite positioning systems in the organizations that employ them. | H |
| **Objective B: Advance their knowledge** of geomatics engineering, both formally and informally, by engaging in lifelong learning experiences including attainment of professional licensure, and/or graduate studies. | H |
| **Objective C: Serve as effective professionals**, based on strong interpersonal and teamwork skills, an understanding of professional and ethical responsibility, and a willingness to take the initiative and seek progressive responsibilities. | H |
| **Objective D: Participate as leaders** in activities that support service to, and/or economic development of, the region, the state and the nation. | H |
| **7. Course evaluation method** |
| Course attendance: 5%Field notes (one by each group): 5%Lab reports\* (one by each group): 50%Final exam: 40%\*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. |
| **8. Course grading scale** |
| To succeed in this class:Fully completed field book must be handed in.Fully completed lab reports (all of them) must be handed in.Final exam must be taken. |
| **9. 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. |
| **10. 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. As soon as the class ends, your submission will be considered late. Per day 10% penalty will be enforced for all late submissions. |
| **11. 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. |
| **12. Disability policy statement** |
| In compliance with the Americans with Disabilities Act (ADA), students who require special accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) located in Boca Raton campus, SU 133 (561) 297-3880 and follow all OSD procedures. |
| **13. Honor code policy** |
| 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 unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and place high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. See University Regulation 4.001 at [www.fau.edu/regulations/chapter4/4.001\_Code\_of\_Academic\_Integrity.pdf](https://exchange.fau.edu/owa/redir.aspx?C=LzsrykF9ck2R7YW3fuHlLFIz-xy2T9IIh5f4wovKPUUefxEzEO-vRapGunabCX6L64O2eED8PJs.&URL=http%3a%2f%2fwww.fau.edu%2fregulations%2fchapter4%2f4.001_Code_of_Academic_Integrity.pdf" \t "_blank). |
| **14. Required texts/reading** |
| Wesley G. Crawford (2008). “Construction Surveying and Layout”, 3rd Edition, Creative Construction Publishing, Inc.  |
| **15. Supplementary/recommended readings** |
| Barry F. Kavanagh (2010). ”Surveying with Construction Applications”, 7th Edition, Prentice Hall. |
| **16. Course topical outline, including dates for exams/quizzes, papers, completion of reading** |
| Week 1: Introduction, Construction SurveyingWeek 2: CommunicationWeek 3: Field PracticesWeek 4: Total Station and Distance MeasurementsWeek 5: Direction Measurements and Traverse ComputationWeek 6: LevelingWeek 7: Equipment CalibrationWeek 8: Chain Corrections and LasersWeek 9: Spring BreakWeek 10: Coordinate Geometry and Office PracticesWeek 11: Horizontal CurveWeek 12: Vertical Curve and QuantitiesWeek 13: Layout TechniquesWeek 14: Construction Control and One-Person SurveyingWeek 15: Course review |
| 17. Course topical outline (tentative laboratory schedule) |
| Laboratories |
| *Date* | *Topic* |
| Sat. Aug 30 | Lab project introduction; field reconnaissance; Construction Control survey  |
| Sat. Sep 06 | Total Station and Distance Measurements |
| Sat. Oct 11 | Leveling |
| Sun. Oct 26 | Horizontal Curve; office processing |
| Sun. Nov 16 | Vertical Curve |