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| **1. Course title/number, number of credit hours** |  |  |  |
| Fundamentals of Surveying Lab - SUR 2101L | 1 credit hour |  |  |  |
| **2. Course prerequisites, corequisites, and where the course fits in the program of study** |  |  |  |
| *Prerequisites*: MAC 1114 WITH MINIMUM GRADE OF “C” OR PERMISSION OF INSTRUCTORThis course is an elementary surveying course designed to introduce surveying and mapping concepts.Co-requisite: SUR2101-Fundamentals of Surveying (2 credits) |  |  |  |
| **3. Course logistics** |  |  |  |
| *Term*: Spring 2015This is a Field course*Class location and time*: S 9:00-4:00 PM, IS 117 |  |  |  |
| **4. Instructor contact information** |  |  |  |
| *Instructor’s name**Office address**Office Hours* *Contact telephone number**Email address* | Aneesh Goly, Ph.D.Boca Raton campus, building EG-36, room 229By appointment(561) 685-2254 (cellular)agoly@fau.edu |  |  |  |
| **5. TA contact information** |  |  |  |
| *TA’s name**Office address**Office Hours* *Contact telephone number**Email address* | Dylan O'BerryBoca Raton campus, building EG-36, room 229By appointment(561) 526-3855 (cellular)aoberry@my.fau.edu |  |  |  |
| **6. Course description** |  |  |  |
| Surveying theory and practice as applied to plane surveying in these areas: error propagation, linear measurements, angle measurements, area determination, differential and trigonometric leveling, and topographic mapping. |  |  |  |
| **7. Course objectives/student learning outcomes/program outcomes** |
| *Course objectives* | 1. Make measurements of horizontal and vertical distances and angles using surveyor’s tapes, levels, and total stations.
2. Determine the location of accessible and inaccessible points using field measurements and mathematical techniques.
3. Record field data accurately and in accordance with professional standards.
4. Understand elementary error theory and correct measurements for known systematic errors.
5. Adjust simple differential leveling and traverse surveys.
6. Compute coordinates and areas by coordinate geometry computations.
7. Understand principles of topographic maps, and how basic plane surveying techniques can be applied to create them.
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| *Student learning outcomes**& relationship to Program/ABET**a-k outcomes* | 1. Make measurements of horizontal and vertical distances and angles using surveyor’s tapes, levels, and total stations (a, b, c, e, and k).
2. Determine the location of accessible and inaccessible points using field measurements and mathematical techniques (a, b, c, e, and k).
3. Record field data accurately and in accordance with professional standards (f, g, and k).
4. Understand elementary error theory and correct measurements for known systematic errors (a, b, c, e, and k).
5. Adjust simple differential leveling and traverse surveys (a, b, c, e, and k).
6. Compute coordinates and areas by geometry computations (a, e, and k).
7. Understand principles of topographic maps, and how basic plane surveying techniques can be applied to create them (a, b, e, g, and k).
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| *Relationship to Geomatics Engineering educational objectives (H: High; M: Medium; L: Low)* | **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. | M |
| **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. | L |
| **Objective D: Participate as leaders** in activities that support service to, and/or economic development of, the region, the state and the nation. | M |
| **8. Course evaluation method** |  |  |  |
| Proficiency Test: 100% | *Note*: The minimum grade required to pass the course is C. |  |  |  |
| **9. Course grading scale** |  |  |  |
| See the supplementary *Course Policies Document*. |  |  |  |
| **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 will be administered and proctored by department personnel unless there are other pre-approved arrangements.*Late work* is not acceptable.*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** |  |  |  |
| Students must check their official FAU electronic mail accounts and the official course web page (Blackboard) on a daily basis for announcements and other correspondence. |  |  |  |
| **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. 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. |  |  |  |
| **14. 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 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\_](http://www.fau.edu/regulations/chapter4/4.001_)[Code\_of\_Academic\_Integrity.pdf](http://www.fau.edu/regulations/chapter4/4.001_Honor_Code.pdf) |  |  |  |
| **15. Required texts/reading** |  |  |  |
| 1. Official Course Policies document, available on the official course web page (Blackboard).
2. Ghilani & Wolf, Elementary Surveying, An Introduction to Geomatics, 15PthP edition (2015). I recommend purchasing a used copy. Any edition from the 12PthP to 15PthP is acceptable.
3. A field book (i.e. http://goo.gl/c902x2)
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| **16. Supplementary/recommended readings** |  |  |  |
| See the official course web site on Blackboard. |  |  |  |

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| **17. Course topical outline, including tentative dates for field labs, proficiency, completion of reading, and other exercises** |
| **Field Labs** |
| Week# | Date | Topic |
| Week 1 | Jan 17 | Initial job site inspection; set survey stations; pacing and horizontal taping. |
| Week 2 | Feb 14 | Introduction to automatic level; C test, differential leveling and adjustment. |
| Week 3 | Feb 28 | Introduction to total station; angles by repetition; closing the horizon exercise; vertical circle index test. |
| Week 4 | Mar 14 | Traversing, Traverse adjustment; introduction to computer usage (adjustments, CAD). |
| Week 5 | Apr 11 | Proficiency, Make-up filed work lab (instructor discretion) |
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