Instructor: Jim Kiser
Office: Richardson Hall 214
Phone: 737 - 2192
Office Hours: Open – email for office hour appointments or stop by
Email: jim.kiser@oregonstate.edu

Course Credits: This course combines approximately 90 hours of instruction and assignments for 4 credits. The course combines approximately 3 hours of lecture time per week with approximately 4 hours per week of laboratory/homework exercises.

Prerequisite: Trigonometry (Math 112). A statistics course is strongly recommended prior to taking this course.

Course Format: Remote Learning for 2020 –
Lab M,T,TH,F 12:00-4:00 PM – Zoom meetings for 2020

Course Website: http://jimkiser0.wixsite.com/jimkiser

Required Text: Kiser, J. 2010. Surveying for Forestry and the Natural Resources. 2nd ed. This is a field and class text that is focused on surveying practice in the forest environment. This is a hands-on text that will be used in several other forestry classes.

Optional Text: Ghilani, Charles. D. 2017. Elementary Surveying, An Introduction to Geomatics. 15th ed. This is a classic surveying text and will be a very useful reference in your professional career. The book is available in hardcover for approximately $197.37 from Amazon.com.

Additional Reading: Buckner, Ben. 1997. The Nature of Measurement. This is a 12 part series that will be made available.

Materials: No additional materials are needed for 2020 although you may find a field notebook is handy. Recommend the Rite in the rain transit fieldbook https://www.riteintherain.com/search?q=transit. Available online or at the bookstore.
The Sequence of Surveying and Measurements Courses:
FE 208 is one course from an integrated sequence of three courses in Forest Surveying and Measurements (FE 208, FE 310). FE 208 is an introduction to the theory and practice of surveying methods and measurements as applied to the specifics of forestry problems and their solutions. FE 208 provides fundamental instruction for surveying and field measurements. FE 208 is also intended to prepare forest engineering students for Forest Route Surveying (FE 310, Control Surveying (CE 463), Property Surveying (CE469), and Survey Law (CE 465). This sequence of courses is designed to prepare students for the Fundamentals of Land Surveying exam that is necessary to become a Professional Land Surveyor.

Course Goals:
There are two primary goals for this course. The first is to learn and become proficient in basic forest survey techniques including surveying fundamentals, field notes, distance and angle measurements, and leveling techniques. The second goal, which is consistent throughout all Forest Surveying and Measurement courses, is the development and application of good professional practices.

Course Objectives:
The course objectives are built around lecture and lab combinations. Material presented in lecture will focus on the theory of surveying measurements and the application of surveying techniques to forestry related problems. The field labs will focus on the hands-on use of equipment, proper field measurement techniques, proper field note keeping, and the application of classroom material in forest field conditions. Field labs will not be available for 2020

Students who successful complete this course will be able to:

- Understand and apply the theory of measurement errors and be able to calculate uncertainty in survey measurements.
- Successfully solve surveying problems of horizontal distance, vertical distance, and angular measurement.
- Successfully solve Survey problems of adjustments to horizontal and vertical measurements
- Understand the principles of map creation and projection and use maps to successfully solve problems of measurements and legal descriptions.
- Understand the concepts and development of the Public Land Survey System in the United States and Oregon, and use these concepts to successfully analyze and solve problems of division of public lands.
- Become proficient in various field survey techniques and field note-keeping.
- Understand the concept of survey order.
Students with Disabilities
Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 737-4098.

Oregon State University policy on Student Conduct
http://oregonstate.edu/studentconduct/code/index.php Students are expected to uphold the Academic Honor Code published by their respective Academic Unit. The code is based on the assumption that all persons must treat one another with dignity and respect in order for scholarship to thrive, (2) Students are also expected to follow the academic and professional standards of the academic units, and (3) Choosing to join the Oregon State University community obligates each member to a code of responsible behavior.

College of Forestry Code of Professional Conduct
http://studentservices.forestry.oregonstate.edu/college-forestry-code-professional-conduct The College of Forestry is a community of faculty, staff, students, and visitors that stretches across all spectrums. Every member of the College community is responsible for conduct that creates, promotes, and maintains a learning and work environment that is open to and welcomes all persons. As a community, we embrace each member through the acknowledgement, honoring, and celebration of our commonalities and our differences. The foundation for maintaining this environment requires that all persons must treat all others with dignity and respect at all times. The College fully supports the mission and goals of Oregon State University and affirms its support of the University policy against discrimination (http://oregonstate.edu/dept/affact/policy/discrimination.html), as well as the University’s policies on honesty, ethics, and substance abuse (including alcohol) (http://oregonstate.edu/admin/stucon/).

Course Policies
1. All assignments are due by the time and date assigned.

2. To receive full credit, assignments must be turned in on time. Late assignments will be penalized 10% for each day late. A lab worth 20 pts that is 3 days late would have 6 pts deducted as a late penalty for example.

3. All work must be neat, legible, and complete. All steps should be shown. Sample calculations and a summary table may be used to illustrate repetitive calculations. Use words to explain the computations where necessary. Use sketches and drawings where required or helpful. Incomplete, undocumented work is unacceptable.

4. All figures, drawings, and tables should be titled.

5. There will be no make-up exams or quizzes except by permission of the instructor.
6. Any requests for deviations in the course policies, schedule, or deadlines must be made in writing to the instructor. These requests should be made in the form of a typed business style letter that clearly states and defends your request. E-mail is acceptable but should be confirmed as having been received.

Grading:

Final grades for the course will be based on the planned following:

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<thead>
<tr>
<th>Item</th>
<th>Total points</th>
<th>% of total</th>
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<tr>
<td>Labs (7)</td>
<td>130</td>
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<td>Homework (5)</td>
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<td>Midterm Exams (2)</td>
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<td>Final Exam</td>
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<td><strong>Totals</strong></td>
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Letter grades will be based on the following:

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<td>C</td>
<td>70</td>
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<tr>
<td>D</td>
<td>60</td>
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<tr>
<td>F</td>
<td>&lt; 60</td>
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Plus and minus grades will be given where appropriate.
# FE 208 Planned Schedule –

| Week 1 | Lecture: | Class Introduction  
|        |          | L1 What is Surveying  
|        |          | L2 Errors in Measurements  
|        |          | L3 Error statistics  
| Homework |          | H1 Statistics homework (10 pts) Due 10/9  
| Lab topic |          | Field Notes, Pacing – No work Due  
| Reading: |          | Kiser, pp. 1-27  
| Supplemental reading: |          | Buckner parts 1 through 4  

| Week 2 | Lecture: | L4 Fundamentals of measurements  
|        |          | L5 Survey measurements-horizontal and vertical  
|        |          | L6 Compass theory  
| Homework |          | H2 Compass homework (15 pts) Due 10/16  
| Lab: 1 |          | Horizontal measurements lab Pacing (10 pts) Due by 5 pm of your lab day week 3  
| Reading: |          | Kiser, pp. 29 – 53 and 121-133  
|          |          | Buckner parts 6 through 9 and 12  

| Week 3 | Lecture: | L7 Traversing  
|        |          | L8 Traverse adjustments  
|        |          | L9 Traverse adjustments continued  
| Lab: 2 |          | Area Layout – Hand compass (20 pts) Due by 5 pm of your lab day week 4  
| Reading: |          | Kiser, pp. 53 – 60  

| Week 4 | Lecture: | L10 Angles and Bearings  
| Homework |          | H3 Traverse Closure problem (20 points) Due 10/30  
| Lab: 3 |          | Area layout with Control (20 pts) Due by 5 pm of your lab day week 5  
| Reading: |          | Kiser pages 53-56 review  

* Note that two midterms will be scheduled somewhere in the 10 weeks
| Week 5 | Lecture: | L11 Angles and bearings continued  
L12 Leveling  
L13 Differential leveling |
| Lab: 4 | Profile leveling  (20 pts)  
Due by 5 pm of your lab day week 6 |
| Reading | Kiser pages 61 - 76 |

| Week 6 | Lecture: | L14 Leveling errors  
L15 Leveling adjustments  
L16 Traverse adjustments – Review of L8-9 |
| Lab: 5 | Closed traverse differential leveling  (20 pts)  
Due by 5 pm of your lab day week 7 |
| Reading | Kiser pages 61 - 76 |

| Week 7 | Lecture: | L17 Area computation  
L18 Topographic mapping/contours |
| Homework | H4 Traverse Closure problem (20 pts) Dur 11/23 |
| Lab: 6 | Putting it all together (20 pts)  
Due by 5 pm of your lab day week 8 |
| Reading | none |

| Week 8 | Lecture: | Midterm 2 – Monday  
L19 Public Land Survey System  
L20 Control Surveys |
| Homework | H5 Traverse Closure problem (20 pts) Due 11/30 |
| Lab: 7 | PLSS and contours (20 pts)  
Due by 5 pm of your lab day week 10 |
| Reading: | Kiser pages 265 - 274 |

| Week 9 | Lecture: | L21 Maps and mapping  
L22 Coordinate systems |
| Lab: | No Lab this week - Thanksgiving Holiday |
| Reading: | Kiser pages 135 - 150 |
| Week 10 | Lecture: | L23 Starting to put it all together  
L24 Continuing to put it all together  
Final exam review |
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