GISC 3412.001/W01 – Plane Spatial Measurement II
Geographic Information Science Program
Spring 2016

A. COURSE INFORMATION

Course number/section: GISC 3412.001/W01
Class meeting time: Lecture: MW 9:00-9:50; Lab: F 12:00-4:00; or Online
Class location: Lecture: CI-229; Lab: CI-229; or Online
Course Website: http://bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Dr. Tony Nettleman, RPLS. Esq.
Office location: CBI 105
Office hours: M/W 11am – 2pm; Friday 9am – 12pm
Telephone: 361-825-3419
e-mail: Charles.Nettleman@tamucc.edu
Appointments: email for times

C. COURSE DESCRIPTION:

Catalog Course Description
Principles and reduction of observations and errors in spatial measurement. Techniques of horizontal and vertical angle measurement for precise positioning. Trigonometric heighting and vertical staff tacheometry. Setting out of structures. Design and computation of horizontal and vertical curves. Prerequisites: GISC 2470.

D. PREREQUISITES AND COREQUISITES

Prerequisites
GISC 2470

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook(s)

Supplies
• Field Book.
• Windows Operating System (XP/Vista/7/8).
• Adobe PDF viewer. (e.g. Adobe Acrobat Reader).
• Web browser with Java Virtual Machine installed.
• Video player able to play MPEG-4 video (Quicktime, VLC, Windows Media Player).
• Speakers/headphones.
• Online students: Microphone and webcam.
F. **STUDENT LEARNING OUTCOMES AND ASSESSMENT**

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:

1. Use electronic total stations to measure differences in elevation, horizontal and vertical angles, and distances (a, b, d, e, f, g, k).
2. Observe and compute elevations from leveling observations (a, b, d, e, f, g, k).
3. Compute parameters of a horizontal circular transition curve and elevations along an equal-tangent parabolic vertical transition curve (a, b, d, e, f, g, k).
4. Understand basic concepts of positioning using Global Navigational Satellite Systems using static and kinematic methods (a, b, d, e, f, g, k).
5. Describe types of distance measurement and their sources of error (a, b, d, e, f, g, k).

G. **INSTRUCTIONAL METHODS AND ACTIVITIES**

All lectures will be presented live in the classroom and recorded for posting online. In-person students will attend live lectures and labs while online students will watch lecture recordings and complete labs on their own time.

Lectures will be held twice a week. Labs will be conducted on Fridays. The lab is due on Wednesday of the next week. Random quizzes will be given along with two final exams.

This course has a field component. Students taking the course online must comply with the GISC Program’s Online Policies available at: [http://gisc.tamucc.edu/undergraduate/undergraduate-online.html](http://gisc.tamucc.edu/undergraduate/undergraduate-online.html)

Specifically, the commitment form (must be submitted to the instructor by the first week of class, otherwise the student will be unenrolled from the course.)

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H. **MAJOR COURSE REQUIREMENTS AND GRADING**

Student learning outcomes will be assessed through three examinations, labs, homework, and quizzes.
### Activity % of Final Grade

<table>
<thead>
<tr>
<th>Activity</th>
<th>% of Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams (2)</td>
<td>30</td>
</tr>
<tr>
<td>Labs</td>
<td>25</td>
</tr>
<tr>
<td>Homework</td>
<td>30</td>
</tr>
<tr>
<td>Quizzes</td>
<td>15</td>
</tr>
</tbody>
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### I. Course Content/Schedule

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TOPIC</th>
<th>CHAPTER(S)</th>
<th>ASSIGNMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Equipment Checks</td>
<td>2 and 3</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>Intro to Construction Surveying</td>
<td>TBA</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>Horizontal Curves</td>
<td>24</td>
<td>24.1, 24.3, 24.15, 24.16</td>
</tr>
<tr>
<td>4</td>
<td>Vertical Curves</td>
<td>25</td>
<td>25.1, 25.2, 25.4</td>
</tr>
<tr>
<td>5</td>
<td>Topographic Surveys</td>
<td>17</td>
<td>17.1, 17.4, 17.7, 17.11</td>
</tr>
<tr>
<td>6</td>
<td>Volume and Area Calculations</td>
<td>26</td>
<td>26.4, 26.5, 26.8</td>
</tr>
<tr>
<td>7</td>
<td>Midterm Exam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>GPS</td>
<td>13</td>
<td>13.1, 13.13, 13.17</td>
</tr>
<tr>
<td>9</td>
<td>Spring Break!</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>10</td>
<td>GPS</td>
<td>14 and 15</td>
<td>14.1, 14.6, 14.7</td>
</tr>
<tr>
<td>11</td>
<td>LIS</td>
<td>28</td>
<td>28.1, 28.3, 28.5, 28.10</td>
</tr>
<tr>
<td>12</td>
<td>Precision Leveling</td>
<td>5</td>
<td>TBA</td>
</tr>
<tr>
<td>13</td>
<td>Digital Leveling</td>
<td>5</td>
<td>TBA</td>
</tr>
<tr>
<td>14</td>
<td>Make-up week</td>
<td>TBA</td>
<td>TBA</td>
</tr>
<tr>
<td>15</td>
<td>Final Exam Prep</td>
<td>N/A</td>
<td>N/A</td>
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Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

### J. Course Policies

#### Attendance/Tardiness

Students are expected to attend regular class and lab meetings. Online students are expected to regularly log in to the course website, watch lectures, and submit assignments.

#### Late Work and Make-up Exams
All assignments must be completed on time. Submission of an assignment after the due date is accepted, but with a penalty of 30% of the grade for the first 24 hours late, and 10% each additional 24 hours. Make-up exams and assignments are not permitted except for documented, exceptional reasons.

**Extra Credit**
No extra credit options are available for this course. No exceptions.

**Food in Class**
Do not eat food during class or lab. Food is forbidden in computer labs.

**Email**
Consider email as official correspondence warranting professional language. Professional emails include elements such as a short descriptive subject line, salutation, complete inquiry in the body of the message, your full name, and course and section number. Unprofessional emails will result in a non-response and request for proper correspondence.

**Prior Learning and Lecture Slides**
The professor will assume that prior to class you have made an earnest effort to understand the material. This will allow you to be prepared to engage the material in more detail or address misunderstandings in class. The slides in class are primarily for visual learners who need to both hear words and see text as they are learning. They are not meant for students to copy as a substitute for prior studying and learning. As such, students should not frantically try to write down everything from the lecture slides. Lecture is simply another time and place to encounter the material again since repeat exposure helps with memory and understanding. As such, your in-class lecture notes do not need to be extremely lengthy. Additionally, please pay attention to what is not on the slides, that is, the extra examples and vocabulary the professor mentions that are related to the slides.

**Technological Excuses**
Hard drive crashes and other computer woes will not be accepted as excuses for late submission. Students should, given the complexity of the tasks they will pursue, be sure that they maintain adequate backup copies of all aspects of their work. Additionally, plan ahead so that you will have time to use the on-campus computers and printers if necessary. You may NOT submit papers/assignments by e-mail. If for some reason you feel you have to do this, you must ask for, and receive, permission ahead of time; furthermore, you may not consider an e-mailed paper/assignment to be submitted until you have received a reply confirming that I have received the paper/assignment.

**Communication about Life Events**
It is the your (student’s) responsibility to keep up with the course instruction, assignments, and examinations. Should a life event interrupt your ability to meet these responsibilities, you must inform the instructor about this as soon as possible and within a reasonable amount of time so that a course of action can be determined. Communicating with the instructor about these life events in an unreasonable time frame is not acceptable and will not change the outcome of missed work nor will it be a valid reason to receive an ‘Incomplete’ designation for the course.
Originality of Work
Every exam and lab assignment for this class must be your own work. You may ask for clarification and assistance, but you may not copy or use anyone else’s work for any reason in this course, unless explicitly stated in a lab assignment or exam.

Note to Online Students
Lecture recordings will be made available online immediately after the in-class meeting. It is your responsibility to watch the recordings in every week so you stay up with the course. Laboratory assignments will be completed on your home computer and must be submitted digitally to the Island Online on a weekly basis. You are responsible for installing and testing the GIS software during the first week of class and keeping your home computer in good working order.

Online Exam Proctoring
For students taking the course online, you will take your tests remotely and they will be proctored by a service called Examity®. To use Examity®, you will need to make sure you meet the following technical requirements, in addition to the technical requirements set forth elsewhere in this syllabus:

- You must take your exam on a computer with a webcam and a microphone (both built-in and external are fine.)
- You must take your exam from a location that with sufficient internet speed: at least 700KBPS upload and download speed. You can test your internet speed at http://www.speedtest.net.

If you have any questions or concerns, you can contact Examity’s technical support team 24/7 via email at support@examity.com or phone at (855)-392-6489.

Examity involves third party charges. Exam-proctoring charges may range from $3 - $31.50 per exam. Students may be required to schedule exams at least 24 hours in advance or incur late scheduling charges. All costs for exams are the responsibility of the student. Students will also be responsible for providing webcams to be used in test proctoring.

K. COLLEGE AND UNIVERSITY POLICIES
- Academic Integrity (University)
University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

- Classroom/Professional Behavior
Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the
Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that must be submitted. No student is eligible to receive a W without completing the official drop process by this deadline. Please consult the Academic Calendar ([http://www.tamucc.edu/academics/calendar/](http://www.tamucc.edu/academics/calendar/)) for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at [http://www.tamucc.edu/provost/university_rules/index.html](http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage at [http://sci.tamucc.edu/students/GradeAppeal.html](http://sci.tamucc.edu/students/GradeAppeal.html). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that
provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

http://disabilityservices.tamucc.edu/

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

L. **OTHER INFORMATION**

- **Academic Advising**
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

**GENERAL DISCLAIMER**

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.

M.