The University of Southern Mississippi  
College of Science and Technology - School of Construction  
BCT 205 – Surveying, Section H002 (online), Spring 2015

COURSE SYLLABUS

Instructor
• John Hannon  
• TEC 239, Bobby Chain Science & Tech  
• 601-266-5550  
• john.hannon@usm.edu

Office Hours
• Online office hours dedicated to course matters:  
  Tuesday/Thursday 3:30-4:30pm CDT* or by appointment.  
  *Subject to change by announcement.

Drop Date
• Please become familiar with the Academic Calendar and deadlines:  
  http://www.usm.edu/registrar/spring-2015-academic-calendars  
  usm.edu => Quick Links => Current Students => Academic Calendar  
  Last day to add/drop without Academic/Financial Penalty is January 20, 2015.

Prerequisites
• The catalog description is as follows: ‘Theory and practice in use of instruments for measuring distances, angles, etc., as applied in architectural and construction projects. Prerequisite: MAT 103. Corequisite: BCT 205L.

This requires that you have taken trigonometry previously with a grade of ‘C’ or better. It also requires that you enroll in the theory and laboratory sections simultaneously. IF you have not passed trigonometry, it is highly suggested that you drop this class and take it after the prerequisite is met.

Credit Hours
• 2 credit hours.

Course Description
Introductory sequence in plane surveying, including the measurement of distances, elevations, angles and directions. Principles and field use of traditional and modern surveying instruments are covered in lecture and practiced in lab. Fundamental surveying computations are also covered.

Course Overview
Surveying is a very important aspect of civil/construction engineering technology. It serves as the link between design (office) and construction (field) activities. All civil/construction technicians must be skilled and knowledgeable in modern as well as traditional surveying theory and methods.
Students will learn how to use basic surveying equipment – the steel tape and plumb bob, the level and level rod, and the total station. Students will learn to plot ground profiles and contours as well as do basic surveying computations using hand-held calculators and surveying software.

**Course Major Topics**
- Measurements: Errors and mistakes, accuracy and precision.
- Horizontal Distances: Pacing, taping and electronic distance measurement.
- Vertical Distances: Differential leveling, profiles, contours.
- Angles/Directions: Bearings, azimuths, declination, theodolite and total stations.
- Horizontal Control: Traverse surveys and computations.

**Student Learning Outcomes**
At the conclusion of the course, students will be able to:

1. Recognize, define and explain common surveying terms and symbols.
2. Compute accuracies for horizontal and vertical distance measurements.
3. Perform direction computations involving horizontal angles, azimuths, bearings.
4. Perform a loop traverse computations, including closure, adjustment, station co-ordinates, and enclosed area.
5. Plot elevation data as ground profiles and/or contour lines.
6. Apply learned survey techniques to construction stakeout.

**Instructional Strategies (optional)**
- This class will be delivered by the traditional and online methods simultaneously. Physical in-class lectures will be captured on video and made available to online students via streaming. Both traditional and online sections will utilize the Blackboard Cross-listed website (course shell) to receive materials, instructions, and assessments from the instructor.

**Course Communication**
- The instructor will communicate with students via announcements, instructions, email, Colaborate application, and video lectures within the Blackboard course shell.
- Students will communicate with each other via email, Colaborate application, and threaded discussions within the Blackboard shell.
- All email sent to the instructor outside of the course Blackboard Shell must contain the following in the subject field: ‘BCT205’

**Required Text (s) and Readings**


**Technology Requirements**
These requirements will be discussed in class and appropriate time given for students to procure. With the exception of hardware, most of these tools can be acquired for little or no cost.

<table>
<thead>
<tr>
<th>Broadband Internet Connection</th>
<th>PC microphone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provided Software Applications</td>
<td>Microsoft Office</td>
</tr>
<tr>
<td>Handheld Calculator</td>
<td></td>
</tr>
</tbody>
</table>

- A broadband internet connection is required to view videos, access Trimble Business Center, and to consume delivery of the course in general. Please do not attempt with dial-up internet connection bandwidths.
- Internet Browser: A BlackBoard Website shell will be used as the course delivery and communication tool. Microsoft Excel: Field notes and computations will be documented in part with use of a Microsoft Excel compatible spreadsheet. Students which do not have access to a licensed version of Excel can download and use Apache Open Office at no charge at this link: [http://www.openoffice.org/](http://www.openoffice.org/) provided that the work is saved in the format specified by the instructor (.xls or .xlsx).
- Microsoft Word: Or file format compatible word processor (Apache Open Office). Acceptable file formats are .doc and .docx. This application will be used for research paper assignments.
- Microsoft Office OneNote: For field notes. This application is offered for free through The School of Construction’s MSDNAA license agreement with Microsoft and can be obtained at this link: [http://e5.onthehub.com/WebStore/ProductsByMajorVersionList.aspx?ws=c7051878-e69b-e011-969d-0030487d8897&vsro=8&JSEnabled=1](http://e5.onthehub.com/WebStore/ProductsByMajorVersionList.aspx?ws=c7051878-e69b-e011-969d-0030487d8897&vsro=8&JSEnabled=1)
- Trimble Business Center is an online repository and application which may be required. The instructor will offer directions for use and log-in, there is nothing to procure with the exception of desktop plug-ins, and no additional cost to the student (broadband required).

*Special Note Concerning Technical Support:* Students are expected to be able to use and maintain a personal computer, keeping it free of viruses and malware, and have the ability to troubleshoot web browser issues, such as cookies and java versions. If these are skills which you have not obtained or are not willing to obtain during the delivery of the course, I suggest that you drop and wait for the face-to-face delivery of the course in a different term.

Please do not rely or depend upon the instructor for technical support. For Blackboard technical support can be found at this link: [http://bberm.edusupportcenter.com/ics/support/default.asp?deptID=8140](http://bberm.edusupportcenter.com/ics/support/default.asp?deptID=8140) and or Itech: [http://www.usm.edu/itech](http://www.usm.edu/itech). There will be times when students will need to notify the instructor of glitches/bugs in blackboard, or mistakes/oversights by the instructor in building the course. In such cases, please report the following at a minimum:

- Your operating system
- Which browser you are using (in many instances, changing browsers may
solve your problem).
- Which version of Java you have installed.
- What processes you have conducted to troubleshoot the problem/issue.

Class Procedures and Requirements
- Weekly quizzes will be given. The scope of the quiz material will be text chapter information and glossary terms.
- Tests will be given at midterm and at the end of the course.
- The 2nd exam will be comprehensive unless announced otherwise.

Class Participation Policy

<table>
<thead>
<tr>
<th>Assessment</th>
<th>% weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Quizzes</td>
<td>40</td>
</tr>
<tr>
<td>2. Tests</td>
<td>20</td>
</tr>
<tr>
<td>3. Exercises</td>
<td>40</td>
</tr>
</tbody>
</table>

*Quizzes/Tests will be not be proctored, time allotted for answering will require study.
*Theory and Lab sections will receive separate grades.

A = 90-100%
B = 80-89%
C = 70-79%
D = 60-69%
F = below 60%

Proctored Exams
- Will not be utilized.

Late Assignments or Projects
- Late work will be accepted. Catastrophic conditions which are documented (death in family, illness) are exceptions.

Academic Honesty
The following is from the USM Undergraduate Bulletin:

“When cheating is discovered, the faculty member may give the student an F on the work involved or in the course. If further disciplinary action is deemed appropriate, the student should be reported to the Dean of Students. In addition to being a violation of academic honesty, cheating violates the Code of Student Conduct and may be grounds for probation, suspension, and/or expulsion. Students on disciplinary suspension may not enroll in any courses offered by The University of Southern Mississippi.”
Students must send the instructor an e-mail using the course web site e-mail stating that they understand USM's academic honesty policy and also understand that if they do not uphold the standards of academic honesty, the instructor will enforce all applicable punishment.

**ADA Syllabus Statement for the Hattiesburg Campus**

If a student has a disability that qualifies under the American with Disabilities Act (ADA) and requires accommodations, he/she should contact the Office for Disability Accommodations (ODA) for information on appropriate policies and procedures. Disabilities covered by ADA may include learning, psychiatric, physical disabilities, or chronic health disorders. Students can contact ODA if they are not certain whether a medical condition/disability qualifies.

**Address:**
The University of Southern Mississippi
Office for Disability Accommodations
118 College Drive # 8586
Hattiesburg, MS 39406-0001

**Voice Telephone:** (601) 266-5024 or (228) 214-3232  **Fax:** (601) 266-6035

Individuals with hearing impairments can contact ODA using the Mississippi Relay Service at 1-800-582-2233 (TTY) or email Suzy Hebert at Suzanne.Hebert@usm.edu.

**Class Schedule***

<table>
<thead>
<tr>
<th>Week</th>
<th>Chapter</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NA</td>
<td>Orientation</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>Introduction</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>Measurements and Computation</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>Basic Mathematics for Surveying</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>Measuring Horizontal Distances</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>Measuring Vertical Distances</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>Measuring Angles and Directions</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
<td>Horizontal Control Surveys</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
<td>Property Surveys</td>
</tr>
<tr>
<td>10</td>
<td>9</td>
<td>Topographic Surveys and Maps</td>
</tr>
<tr>
<td>11</td>
<td>10</td>
<td>Highway Curves and Earthwork</td>
</tr>
<tr>
<td>12</td>
<td>11</td>
<td>Construction Surveys</td>
</tr>
<tr>
<td>13</td>
<td>NA</td>
<td>Construction Stakeout-Terrain</td>
</tr>
<tr>
<td>14</td>
<td>NA</td>
<td>Construction Stakeout-Structures</td>
</tr>
<tr>
<td>15</td>
<td>NA</td>
<td>Digital Terrain Models (DTM)</td>
</tr>
<tr>
<td>16</td>
<td>NA</td>
<td>Digital Terrain Models (DTM)</td>
</tr>
</tbody>
</table>

*Schedule may be revised if necessary. Students will be notified if this is the case.