What is CIVL 1101?

**Course Title:** Civil Engineering Measurements

**Course Description:**
Theory of measurements, linear measurements, angles, topographic surveys, and mapping with applications in Civil Engineering: emphasis on individual and group problem solving, techniques of data collection and analysis, and project documentation.

**Course Meetings:**
- **Lecture:** Tuesday/Thursday, 1:00 - 1:55pm, ET 233
- **Lab:**
  - Wednesday: 2:20 - 5:20pm, ES 114
  - Thursday: 2:20 - 5:20pm, ES 114
  - Friday: 2:20 - 5:20pm, ES 114

**Instructor:**
Dr. Charles Camp, Office: ES 106B
Phone: 678-3169 (office)
Email: cvcamp@memphis.edu

**Office hours:** An "open door policy" or by appointment

**Required Textbooks:**
- Strategies for Creative Problem Solving
  by Fogler and LeBlanc
  Prentice Hall

**Required Textbooks:**
- Design and Control of Concrete Mixtures
  Portland Cement Association 2016

**Required Software:**
- MathType
  MathType is a powerful interactive equation editor for Windows and Macintosh that lets you create mathematical notation for word processing, web pages, desktop publishing, presentations, elearning, and for TeX, LaTeX, and MathML documents.
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**Required Computer:**

- [Office 2016](#)

**Web site:** [www.ce.memphis.edu/1101](http://www.ce.memphis.edu/1101)

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**Course Learning Outcomes**

At the successful completion of this class, the student should be able to demonstrate:

1. Recognize and apply basic instrumentation and measurements typical to those used in Civil Engineering practice.
2. Recognize the limitations, constraints, and applicability of various field and laboratory data collection methods.
3. Application of the spreadsheets to solution of engineering problems.
4. Application of problem solving strategies to the analysis, design, and evaluation of engineering problems.
5. Write and present technical reports supporting engineering decision making.
6. Demonstrate the ability to work in a group.

**Grading**

The final grades for the course will be based on the following percentages:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Mid-Term Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
<tr>
<td>Project #1</td>
<td>15%</td>
</tr>
<tr>
<td>Project #2</td>
<td>15%</td>
</tr>
<tr>
<td>Project #3</td>
<td>15%</td>
</tr>
</tbody>
</table>

**Grading**

Final letter grades will be based on the following scale which reflects the percentages as noted above:

<table>
<thead>
<tr>
<th>Exam/Homework/Projects</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100</td>
<td>A</td>
</tr>
<tr>
<td>87-89</td>
<td>B+</td>
</tr>
<tr>
<td>84-86</td>
<td>B</td>
</tr>
<tr>
<td>80-83</td>
<td>B-</td>
</tr>
<tr>
<td>77-79</td>
<td>C+</td>
</tr>
<tr>
<td>74-76</td>
<td>C</td>
</tr>
<tr>
<td>70-73</td>
<td>C-</td>
</tr>
<tr>
<td>60-69</td>
<td>D</td>
</tr>
<tr>
<td>Below 60</td>
<td>F</td>
</tr>
</tbody>
</table>

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**Grading**

- Attendance in both the lecture and lab portions of the class is **required**. Every unexcused absence from lecture is a reduction in the final class average of 2 points.
- We will use **TopHat** to record attendance.
- Every unexcused absence from a lab is a reduction of 25% on the student's individual grade for that lab section.
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TopHat – interactive learning environment
https://tophat.com

Homework

- Homework is due at the beginning of class on the due date.
- Late homework will not be accepted for any reason.
- If you sign up for the class Remind page with join code ce1101, two homework assignments will be dropped in computing the final homework average.

Make-up Work

- Due to the nature of the class, make-up work will be very difficult to complete.
- Should the student think that they should be allowed to make-up missed work they must document, in writing, their reason(s) for being allowed to make up the missed work or to have an absence excused.
- The student will be required to submit documentation for missing the class session and should be ready to provide such evidence at the time the request is made.
- It will be up to the discretion of the instructors if work may be made up or if the absence is excused.

Project #1 – Topographic Model

- The objective of this project is to develop a topographic model of a site (the one assignment to you in lab).
- Typically, the first step in a topographic survey is to measure the elevation of a series of points within the area.
- From the elevation data develop a contour map using at least a 1 foot contour interval.
- Using a geographical information system (GIS) develop a topography model of your site.
- Use GIS tools to construct contour lines
- Using aerial images as backgrounds.
- Include a horizontal and vertical scale, your group name and logo, and a north arrow.
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Project #1 – Topographic Model

- Construction Engineering
- Environmental Engineering
- Geotechnical Engineering
- Structural Engineering
- Transportation Engineering
- Urban Planning
- Water Resources

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Project #2 – Concrete Strength

The objective of this competition is to develop the strongest concrete cylinders as measured by the average normal stress (compression stress).

The concrete strength problem poses several challenges to the participants: selection of an appropriate concrete mix based on strength and workability; use of admixtures, selection of a curing environment, and the analysis of the results.
Project #3 – Water Filtration Design

The objective of this project is to design and construct, within given constraints, a granular-media filter that would treat as much water as possible (maximize volume) while removing as many suspended particles as possible (minimizing turbidity levels) for a given amount of time.

Technical Communications

- E-mail is a very useful tool for intra- and inter-group communications
- The instructors in CIVL 1101 will use the university e-mail system to communicate with students
- If normally you use another e-mail account, then you need to go to http://iam.memphis.edu to make sure that mail sent to your U of M account is automatically forwarded to the account you do use.
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Any questions?