Course Syllabus
CE3710 – Uncertainty Analysis in Engineering
Department of Civil and Environmental Engineering
Fall 2015

Instructor Information
Instructor: Dr. Veronica L. Webster, Associate Professor
Office: Dillman 201D
Telephone: 487-1079
E-mail: vlweb@mtu.edu
Office Hours: Tuesday 2 – 4 pm
Thursday 9 – 11 am

** These are times when I am guaranteed to be in my office and available. However, I have an open door policy, so feel free to stop by whenever my door is open. Appointments may also be made as needed. Any modifications of office hour times for specific days/weeks during the semester will be posted on the course website.

Course Identification
Course Number: CE3710-OA
Course Name: Uncertainty Analysis in Engineering
Course Location: Chem-Sci 104A
Class Times: MWF 10:05 am – 10:55 am
Prerequisites: MA2160 (Primarily first-year calculus; a little multivariate calculus)

Course Description/Overview
The course provides an introduction to probability and statistics, statistical techniques, and uncertainty analysis with examples drawn from civil, environmental, agricultural and related engineering disciplines. Specific topics include: data presentation, discrete probability theory and counting, commonly used probability distributions (normal, lognormal, exponential, Gumbel, Weibull, binomial), inference from sample data, parameter estimation, confidence intervals, classical hypothesis tests (Student t distribution), and simple linear regression and model selection. Examples include models of material strength, natural attenuation of pollution, structural reliability, and rainfall and flood depth distributions.

Course Resources

Required Course Text:
Course Website:

- **Canvas**  &lt;https://mtu.instructure.com/login&gt;
  
  *Homework solutions will be distributed via Canvas and course grades will be maintained using the grade book in Canvas. All other information will be posted on my personal website.*

- **Personal Website**  &lt;http://www.cee.mtu.edu/~vlweb/ce3710.html&gt;
  
  *This website will be used to post any changes to the schedule or office hours, practice exams, lecture handouts, and other information relevant to the course.*

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**Grading Scheme**

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**Grading System**

Grades will be assigned as follows:

- 93-100 A
- 88-92 AB
- 83-87 B
- 78-82 BC
- 73-77 C
- 68-72 CD
- 61-67 D
- 0-60 F

**Grading Policy**

Grades will be based on the following:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>70%</td>
</tr>
<tr>
<td>Two Mid-term Exams</td>
<td>20%</td>
</tr>
<tr>
<td>Comprehensive Final Exam</td>
<td>10%</td>
</tr>
</tbody>
</table>

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**Homework**

Homework will be assigned approximately once per week, but students are encouraged to work through appropriate problems before the next lecture. *Assignments are due by the start of class on the specified due date.* For full credit, all work must be shown—do not just give the answer. Late homework will be penalized 10% per day late. No homework will be accepted once the graded assignments are returned.

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**Exams**

Two mid-term exams will be given, each covering 5-6 weeks of material. A comprehensive final exam will also be given. All exams will be open book. Calculators may be used only for computing numbers. **There will be no make-up exams.** In the event of pre-meditated absences, for such reasons as university sponsored activities or family emergency, the Instructor should be notified as early as possible. Exams may be given prior to absence.

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**University Policies**

Each student in CE 3710 is expected to abide by MTU policies for Academic Integrity. Academic dishonesty cases will be handled in accordance with the University's policies. Use the following link to access details: [http://www.studentaffairs.mtu.edu/dean/judicial/policies/academic_integrity.html](http://www.studentaffairs.mtu.edu/dean/judicial/policies/academic_integrity.html)

Student work products (exams, essays, projects, etc.) may be used for purposes of university, program, or course assessment. All work used for assessment purposes will not include any individual student identification.

Michigan Tech has standard policies on academic misconduct and complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act of 1990. For more information about reasonable accommodation for or equal access to education or services at Michigan Tech, please call the Dean of Students Office, at (906) 487-2212 or go to [http://www.mtu.edu/provost/faculty-resources/syllabus-policies/](http://www.mtu.edu/provost/faculty-resources/syllabus-policies/)