IE 212: COMPUTATIONAL METHODS FOR INDUSTRIAL ENGINEERING
WINTER 2015

COURSE SYLLABUS
Last Revised: 1/2/2015

Instructor  
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BAT 349  
ghanbars@oregonstate.edu

Office Hours  
Tuesdays and Thursdays 10:30AM – 12:00PM or by appointment
Office hours may change as the term progresses. Students are responsible for checking for updates to the course's syllabus regularly.

Class Time & Room  
TR 1300-1550 KEAR 112

Course description  

Course credits  
4

Prerequisites  
ENGR 112 and algebra; calculus; differentiation and integration.

Course web site  
http://classes.engr.oregonstate.edu/mime/summer2015/ie212

Textbook  
No textbook is required.

References  
The references listed below are available free of charge in electronic format through the OSU library:

Course Learning Outcomes:

Students successfully completing this course should be able to:
1. Utilize basic program design tools such as flowcharts, pseudocode and hierarchy charts, to represent algorithms.
2. Write Visual Basic for Applications (VBA) code in the Visual Basic Environment (VBE).
3. Manipulate objects such as workbooks, worksheets, ranges of cell and cells in Microsoft Excel.
4. Properly define user variables of different types (e.g., Boolean, Integer, etc.) for use in VBA programs.
5. Apply different types of programming structures (e.g., if-then-else, do-while-loop, select-case, etc.) to control the logical execution of VBA programs.
6. Properly define and utilize arrays to store and manipulate large collections of data.
7. Write user-defined sub procedures and functions.
8. Design and implement a graphical user interface (GUI) in Microsoft Excel to solve an engineering problem given a set of customer requirements.
Grading

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>40%</td>
</tr>
<tr>
<td>Attendance</td>
<td>+5%</td>
</tr>
<tr>
<td>Midterm Examination</td>
<td>20%</td>
</tr>
<tr>
<td>Final Examination</td>
<td>20%</td>
</tr>
<tr>
<td>Term project (individual)</td>
<td>20%</td>
</tr>
</tbody>
</table>

Grading Scale

Based on the percentage of maximum points accumulated and assigned according to the following table:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>92% or above</td>
</tr>
<tr>
<td>A-</td>
<td>90-92%</td>
</tr>
<tr>
<td>B+</td>
<td>87-90%</td>
</tr>
<tr>
<td>B</td>
<td>83-87%</td>
</tr>
<tr>
<td>C+</td>
<td>77-80%</td>
</tr>
<tr>
<td>C</td>
<td>73-77%</td>
</tr>
<tr>
<td>D</td>
<td>59-70%</td>
</tr>
<tr>
<td>F</td>
<td>&lt;59%</td>
</tr>
<tr>
<td>B-</td>
<td>80-83%</td>
</tr>
<tr>
<td>C-</td>
<td>70-73%</td>
</tr>
</tbody>
</table>

COURSE POLICIES

Homework

Homework will be assigned on a regular basis. Instructions regarding how each assignment must be submitted will be provided in advance by the instructor. **Students must carefully review and understand the submission instructions for each individual homework assignment.**

In this class, the majority of the assignments will be submitted in electronic format through *The Engineering Accounts and Class Homepage* (T.E.A.C.H.) accessible via [http://engr.oregonstate.edu/teach](http://engr.oregonstate.edu/teach). All assignments (i.e., hard-copy or electronic) must be accompanied by a grading sheet to be supplied by the instructor for each assignment. **Hard copies of the completed homework assignment (or grading sheet, if submitted electronically) must be turned in at the beginning of the lecture session on the day it is due. Late assignments will not be allowed. No exceptions.**

Efforts will be made to return graded homework within one week after it is turned in. **Homework assignments must be completed individually by the student, unless otherwise specified by the instructor.**

Attendance

Students are expected to attend lecture sessions regularly. Class time is intended to be interactive and will include class participation in solving problems, and whenever possible, the use of small group discussions or activities. Attendance will be taken on a random basis during the term using different kinds of instruments (e.g., individual and group exercises, pop quizzes, etc.) **A student must attend all of the lecture sessions to be eligible to receive the extra 5% credit for attendance.**

Midterm and Final Examinations

Students are expected to take the midterm and final examinations on the scheduled dates listed in the **IMPORTANT DATES** section of the syllabus. If a student is unable to attend these exams due to **verifiable** unforeseeable reasons (e.g., illness, accident, etc.), the instructor will, at his discretion, decide the most appropriate course of action to be taken.

The midterm and final examinations will be **closed-book and closed-notes** in this course. The midterm and final examinations will stress the application of many of the techniques and algorithms discussed in class and, in most cases, will be based on the homework assignments. **The final exam will be cumulative.**

Electronic Devices

Before class begins, please make sure your cell phone/smart phone is set to "silent mode" and refrain from texting, emailing, social networking or using other applications on your phone during class time. The use of any electronic devices during class time other than a laptop computer is strictly prohibited.
**Classroom Conduct**

Students are expected to arrive to class on time, be attentive throughout the class meeting, refrain from rude or distracting behavior, and stay in class until dismissed by the instructor. The following are considered examples of disruptive behavior:

- Leaving/entering the classroom during class time
- Being late, reading the paper, sleeping in class
- Making noises, repeatedly interrupting
- Passing notes, answering cell phone
- Harassing behavior, personal insults, inappropriate language
- Physical threats or actions
- Refusal to comply with faculty or staff direction
- Persistent and unreasonable demands for time and attention both in and out of the classroom
- Unwillingness to cooperate when a solution is being sought

Please respect others. Students who do not meet these expectations will be referred to the Student Conduct Program for disciplinary action. Behaviors that create a hostile, offensive or intimidating environment based on gender, race, ethnicity, color, religion, age, disability, marital status or sexual orientation will be referred to the Office of Affirmative Action.

**Challenging Grades on Homework and/or Exams**

Students have 72 hours to challenge a grade (not including weekends and/or holidays). The 72-hour clock begins from the time any graded deliverable (e.g., homework assignment or exam) is returned by the instructor regardless of whether or not the student is present to receive it.

When challenging a grade, a student must submit to the instructor a word-processed description of the grading error attached to the graded homework assignment or exam. Students will be notified of the outcome of their grade challenge within 72 hours (not including weekends and holidays) of its receipt.

**Challenging Final Course Grades**

Final course grades will be changed only if an error was made in computing the student’s final course grade. If a student believes such an error was made, then she or he should contact the instructor immediately.

**Academic Integrity**

I take academic integrity very seriously. Therefore, there is a zero tolerance policy in effect for cheating in this class. All work must be the student’s own, unless collaboration is specifically and explicitly permitted. Any unauthorized collaboration or copying will at a minimum result in no credit for the affected assignment/exam and may be subject to further action as described in the Academic Dishonesty section of OSU’s Student Conduct and Community Standards (SCCS) web page (http://oregonstate.edu/studentconduct/).

Academic dishonesty is prohibited and considered a violation of the OSU Student Conduct Regulations which state the following:

“Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another. It includes:

CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using prohibited materials and texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.

FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.
ASSISTING - helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone's grades or academic records, taking a test/doing an assignment for someone else by any means, including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114).

TAMPERING - altering or interfering with evaluation instruments or documents.

PLAGIARISM - representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.”

Statement Regarding 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 541-737-4098."

IMPORTANT DATES

Midterm examination: Thursday, July 16th, 2015 (during class time)
Final examination: Thursday, August 13th, 2015 (during class time)

TENTATIVE TOPICS TO BE COVERED

• Course Overview & Introduction
• Algorithm representation tools
• Designing user interfaces
• Manipulating Excel objects
• Variables
• Programming structures
• Developing sub procedures and function procedures
• Array manipulation