

Course Syllabus

Course Name: Senior Design 1

Course Number: CE 4188,1 credit

Instructors: Professor Marshall (if he is still at UTEP)
Engineering Room A214
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Professor Raheem
Engineering Room A213
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Location/time: Fridays at 8 AM, check Goldmine for location.

Course Description: Selection and site development of a senior design project

Textbook: Colley, Barbara, Practical Manual of Land Development. McGraw-Hill Publishing, ISBN 978-0-07-144866-6, any edition – at least one copy per team

Class Structure: This course will require students to select a senior design project to be worked on as a team and to perform various site related engineering design analyses. Teams shall be organized in the first class session. Individual assignments within each team will be determined by each team and due weekly in hard copy form at the start of the following class. If these assignments are not delivered prior to the start of the following class, they will not be graded at all. Even if a student does not complete a weekly assignment, that assignment work still must be completed to complete the project even though it will not be graded.

If any part of the project work is not completed by the end of the class term, the responsible student and that team will lose one full grade.

If, at any time, you are confused and do not know what to do on an assignment, contact one of the Professors early in the assignment week. Seek assistance from Dr. Raheem on estimating costs, schedules; and LEED/Green Globe activity; Dr. Marshall on all other matters.

Final grades will be based on each assignment having a maximum of ten points plus 50 points available for the team final report and 100 points available for the final exam. The final grade will be determined by the percentage of the summation of the grades divided by the total available points for the course with 90% and above yielding an A, 80% -90% yielding a B, 70%-80% yielding a C, 60%-70% yielding a D, and anything below 60% resulting in an F.

No excuses will be allowed regarding the submission of any assignment. If excuses are attempted, they will result in a full letter grade reduction per excuse.

This is not really a class, it is a project. Projects do not get done with excuses. Two principles that will help you in this class and in your career:

- Prepare to succeed, or prepare to fail
- Never believe what you think

Assignments

Assignments are to be completed and completed by each student weekly. Each team shall submit a final report. Please see below for reading and deliverable assignments.

Deliverable and Reading Schedule

Week Textbook Reading

**1 Chapters 1-3 before
first class session**

Team Deliverables

Do by end of first class as a Team, no need to submit anything to professors for this class

- 1. Form teams/assign work**
- 2. Discuss how to select a site**
- 3. Decide on project type**

TEAMS SHALL BE FORMED WITH A MINIMUM OF ONE BSCSEM STUDENT PER TEAM WHO WILL BE RESPONSIBLE FOR ESTIMATING AND SCHEDULING WORK WHERE APPLICABLE.

2 Chapters 4-5

Submit documentation each week of individual student work for all information obtained and conclusions reached by start of Week 2 class:

- 1. Locate site and/or nearby soil/groundwater data and geologic information**
- 2. Locate county file data regarding property boundaries, legal description, acreage and whether there are any liens or easements on the property.**
- 3. Compile site topography data**
- 4. Compile adjacent property use information and if there are any physical obstructions to use of the site
By visiting and observing site conditions, including wetlands**
- 5. Determine site zoning information, setbacks, height limitations, and signage requirements/
Also, begin and continue to complete work on the following checklists:**

<https://www.prospertx.gov/wp-content/uploads/Pg-38-CIVIL-ENGINEERING-PLAN-CHECKLIST.pdf>

https://msa.maryland.gov/msa/intromsa/budget/pdf/site_development_checklist.pdf

If your team has more students than there are assignments for the week, you may double up on an assignment and list both names on the submission.

3 Chapter 6 and Appendix D

- 1. Determine clearing and grubbing, and any demolition needed and estimate cost of this work and time required to complete the work**
- 2. Determine grading required after making preliminary decisions on the project structure sizes and locations, estimate costs and time required for this work**
- 3. Determine access road and parking requirements and estimate cost and construction time**
- 4. Determine storm drain requirements and estimate cost and time for this work**
- 5. Estimate water and sewer requirements, costs, and time**

4 Chapter 7

- 1. Determine soil erosion work requirements, cost and Time**
- 2. Determine landscaping needed, cost and time**
- 3. Develop grading plan**
- 4. Develop road and parking plans**
- 5. Develop storm drain plan**

The week 4 assignments listed above will be discussed in Week 3's class. Week 4's class will consist of discussion by Dr. Raheem on estimating and scheduling procedures.

5 Chapter 8-11 Appendix E

- 1. Develop sanitary sewer plan**
- 2. Develop water system plan**
- 3. Determine preliminary estimated foundation requirements and costs and time**
- 4. Develop erosion control plan and determine costs and time for the work, and determine/apply LEED or Green Globe sustainability criteria**

- 6. Determine project permitting time and costs**
- 6. Chapters 12 – 14.**
 - 1. Prepare Powerpoint (PP) title slide**
 - 2. Prepare PP slide about Project Description**
 - 3. Prepare PP slide on Site Grading**
 - 4. Prepare PP on site access roads and parking**
 - 5. Prepare PP slide on water, sewer, storm drain systems**
- 7**
 - 1. Prepare landscaping PP slide**
 - 2. Prepare foundation design/ soil issue PP slide**
 - 3. Prepare overall site plan PP slide**
 - 4. Prepare Cost Estimate summary PP slide**
 - 5. Prepare schedule summary bar char PP slide**
- 8 - 14**

Preliminary presentations by teams
- 15**

Submit Summary Report and take Final Exam. The Summary Report shall contain a Summary of the results of all of the weekly assignments together with completed checklists.