Prerequisites: CVEEN 5305/6305 (Introduction to Foundation Engineering) or equivalent (one year of soil mechanics including an introduction to foundation engineering). Recommended: CVEEN 6310 -Foundation Engineering or equivalent

Primary References:


Grading:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weighting</th>
<th>Grade</th>
<th>Score (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework &amp; Lab Assignments</td>
<td>20%</td>
<td>A</td>
<td>95-100</td>
</tr>
<tr>
<td>Midterm and Final Exams*</td>
<td>60%*</td>
<td>A-</td>
<td>90-94</td>
</tr>
<tr>
<td>Journal Paper Review</td>
<td>5%</td>
<td>B+</td>
<td>87-89</td>
</tr>
<tr>
<td>Attendance</td>
<td>10%</td>
<td>B</td>
<td>83-86</td>
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<tr>
<td>Quizzes</td>
<td>5%</td>
<td>B-</td>
<td>80-82</td>
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<tr>
<td></td>
<td></td>
<td>C+</td>
<td>77-79</td>
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<td>70-72</td>
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<td></td>
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<td>D+</td>
<td>66-63</td>
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<tr>
<td></td>
<td></td>
<td>D-</td>
<td>60-62</td>
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<tr>
<td></td>
<td></td>
<td>E</td>
<td>&lt; 60</td>
</tr>
</tbody>
</table>

*Higher score 35%, lower score 25%

How to be Successful in this Course: The following suggestions are provided to help you be successful in this course. (1) Come to every class; stay awake and pay attention during lecture. Take handwritten notes of everything written on the board or discussed in class. (2) Keep up with the homework assignments. If you fall behind, it will be difficult to get caught up. Start each assignment as soon as possible so that (a) you get a feel for how long it will take you to complete the assignment, and (b) you can determine for which problems you will need to seek help. (3) Do as much work as possible by yourself with as little help from others as possible. Working assignments in a group not only is prohibited (see details in Homework section below), it prevents many students from truly understanding the concepts being tested by the problems. (4) If you need help, the best source is the professor. He understands the material better than any of your classmates. (5) Thoroughly read the appropriate reading assignment before each class to obtain a general understanding of the material to be covered in that lecture. Doing so allows you to understand the material better as it is discussed in class, with less effort and time needed outside the classroom. (6) Each week when the graded homework assignment is returned to you, re-do all the problems (or parts of problems) that you did not do 100% correctly. Seek help from others (preferably the professor) if you do not understand what you did wrong or how to do a problem correctly. Re-doing the problems in a timely manner allows you to understand fully the concepts and procedures needed to do all the assignments in the course, which will likely result in you getting significantly higher grades on the exams. (7) Take a course load that is commensurate with the time you have available to spend on your courses. 15 credit hours of undergraduate classes requires a minimum of about 50 hours of work per week, which is more than the typical job that requires 40 hours per week.

Course Workload: It is expected that each student will spend, on average, about 3 hours of work per week per credit hour in addition to lecture time. For this class, which is a three-credit hour class, it is expected that each student will spend on average about 9 hours of work per week on homework assignments and/or exams in addition to lecture time. If you find that you are consistently spending more time than this, please see the instructor for assistance to help you increase your efficiency and reduce the amount of time spent on the class.

Electronic Recording of Lectures: Electronic recording of lectures of any kind is strictly prohibited. Violation of this rule will result in a grade of E for the course.
Rules Regarding Cell Phones: The use of a cell or mobile phone of any type at any time or for any reason during class lectures is strictly prohibited. Therefore, please turn off all cell phones BEFORE the lecture or laboratory begins and put your cell phone away. If there is an unusual circumstance that requires you to have access to your cell phone during the lecture, please notify the instructor before class. The penalties for unauthorized use of a phone during lecture are as follows: A 1% reduction in overall course grade for the first violation, a 10% reduction in overall grade for the second violation, and a grade of E for the course for any additional violation beyond the first two.

Reading Assignments: Reading material for each class is listed in the outline given on p. 8. To facilitate the learning process, each student will be required to read the assignment and be prepared to discuss in class the material that was assigned. We will try to keep to the schedule as closely as possible, but some variations will undoubtedly occur. Each student is responsible for tracking the progress of the class and determining the appropriate reading assignment for the next class. Unannounced (pop) quizzes covering the assigned material may be given in any class to ensure that students are reading the assigned material and paying attention in class. PLEASE BRING THE APPROPRIATE REFERENCES TO EACH CLASS!

Homework: Homework assignments and laboratory reports are due at the beginning of class on the due date. Late assignments will be accepted with a penalty of 10% per day, with the exception that each student may turn in two homework assignments during the semester up to three school days late without penalty.

A minimum of 75% of the homework and lab problems must be completed and turned in for grading in order to pass the course. Failure to do so will result in either a grade of “E” or “I” for the course at the discretion of the instructor and in accordance with university rules regarding grades of incomplete (“I”). Assignments can be downloaded from the course web site. Homework assignments must follow the departmental formatting and style requirements summarized on the last page of this handout with details given in the style guide (available on the course website), with the following additional requirement:

It is permissible to discuss the basic concepts and how to solve the problem in a general sense with others prior to working on the assignment. Once you have started a problem, you may ask questions of other students, but the questions should be limited to specific aspects of a problem that you do not understand. It is not acceptable to work on the assignments with another person or in a group where the assignments are worked entirely together. You may get as much help from the instructor or TA for the class as he or she can legitimately give you during regularly scheduled office hours or via e-mail.

All assignments must contain the following signed honor pledge:

On my honor as a student of the University of Utah, I have neither given nor received unauthorized aid in completing this assignment.

By signing this honor pledge, you are indicating that you have abided by the rules provided above and those given in the section on Ethics in the departmental homework policy (see p. 10 of this syllabus). Cheating on the homework or laboratory reports will result in a grade of zero for the entire homework/lab assignments grade.
Furthermore, the following formatting requirements must be followed for all assignments where they are pertinent:

1. There are two choices with respect to showing gridlines when you are plotting a graph with two variables [e.g., \( y = f(x) \), \( q_{bl} = f(B) \), etc.]: (a) Show gridlines in both directions, or (b) do not show gridlines in either direction. It is unacceptable to show gridlines in one direction only as is the default for some spreadsheet programs.

2. Use subscripts and Greek letters, where appropriate, in all text, tables, graphs, figures, etc. that are done using computer programs. Nearly all computer programs have these capabilities. If the program you are using does not have these capabilities, please make a note in your assignment to indicate so.

3. If you perform regression analyses using EXCEL and show the equations on your graph, they will be shown initially as \( y = f(x) \) because the program does not know what variables you are using. Change the variables from \( y \) and \( x \) to the appropriate variables. For example, if the equations is shown as \( y = 13.209 + 5.2903x \) but you are plotting \( q_{bl} = f(B) \), change the equation to \( q_{bl} = 13.209 + 5.2903B \).

4. Do not use excess decimal places when labeling axes on a graph. Use the least number of decimal places that are appropriate for the scale intervals that you are using. Example, if your scale is from 0 to 25 in 5 unit intervals, use zero decimal places: 0, 5, 10, 15, 20, 25, not 0.00, 5.00, 10.00, 15.00, 20.00, 25.00. Also be consistent in the number of decimal places used. For example, if your scale is from 0 to 2.5 in intervals of 0.5, the labels should be 0.0, 0.5, 1.0, 1.5, 2.0, 2.5; not 0, 0.5, 1, 1.5, 2, 2.5.

5. When giving titles to axes in a figure, use names only, symbols only, or both names and symbols for both axes. Also provide units for each variable unless it is dimensionless. For example, the following axis titles are acceptable when plotting \( q_c \) vs. \( D_r \):
   - Cone Tip Resistance, \( q_c \) (MPa) vs. Relative Density, \( D_r \) (%).
   - \( q_c \) (MPa) vs. \( D_r \) (%)

However, the following are unacceptable:
   - Cone Tip Resistance, \( q_c \) (MPa) vs. \( D_r \) (%)
   - \( q_c \) (MPa) vs. Relative Density, \( D_r \) (%)
Examples of improperly formatted graphs and figures that illustrate the requirements shown above are provided below.

Improperly formatted table:

<table>
<thead>
<tr>
<th>Sublayer</th>
<th>( z_{\text{midht}} ) (m)</th>
<th>( H_0 ) (m)</th>
<th>( \sigma'_{y0} ) (kPa)</th>
<th>( z_{b,\text{midht}} ) (m)</th>
<th>( \Delta \sigma_y ) (kPa)</th>
<th>( \sigma'_{vf} ) (kPa)</th>
<th>( S_c ) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>22.5</td>
<td>5</td>
<td>201.45</td>
<td>12.5</td>
<td>81.82</td>
<td>283.27</td>
<td>0.1140</td>
</tr>
<tr>
<td>2</td>
<td>27.5</td>
<td>5</td>
<td>247.5</td>
<td>17.5</td>
<td>78.58</td>
<td>326.08</td>
<td>0.0922</td>
</tr>
<tr>
<td>3</td>
<td>32.5</td>
<td>5</td>
<td>293.545</td>
<td>22.5</td>
<td>74.38</td>
<td>367.93</td>
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<tr>
<td>4</td>
<td>37.5</td>
<td>5</td>
<td>340</td>
<td>27.5</td>
<td>69.51</td>
<td>409.11</td>
<td>0.0623</td>
</tr>
</tbody>
</table>

\[ \Sigma = 0.3440 \]

The same table properly formatted:

<table>
<thead>
<tr>
<th>i</th>
<th>( z_{\text{midht}} ) (m)</th>
<th>( H_0 ) (m)</th>
<th>( \sigma'_{y0} ) (kPa)</th>
<th>( z_{b,\text{midht}} ) (m)</th>
<th>( \Delta \sigma_y ) (kPa)</th>
<th>( \sigma'_{vf} ) (kPa)</th>
<th>( S_c ) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>22.5</td>
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<td>201.45</td>
<td>12.5</td>
<td>81.82</td>
<td>283.27</td>
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</tr>
<tr>
<td>2</td>
<td>27.5</td>
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<td>247.5</td>
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<tr>
<td>4</td>
<td>37.5</td>
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<td>339.60</td>
<td>27.5</td>
<td>69.51</td>
<td>409.11</td>
<td>0.0623</td>
</tr>
</tbody>
</table>

\[ \Sigma = 0.3440 \]
Formatting is generally worth 10% of the score for each homework assignment, but the percentage may change at the discretion of the instructor. Failure to comply with this policy will result in either reduced credit, rejection of homework that is considered to be non-submittal, or receipt of a failing grade at the discretion of the instructor.

Calculations and Significant Figures: The concept of significant figures (digits) is an important concept when performing engineering calculations. Please carefully read the handout on significant figures (Significant Figures.pdf). When performing calculations, do NOT round off intermediate values, as any rounding done prior to obtaining the final answer may result in an error in your answer. Here is an example illustrating a case where rounding of intermediate values gives a wrong answer:
Given: \( e = 0.414, S = 84.6\%, G_s = 2.72, V_s = 2.49 \text{ ft}^3, \gamma_w = 62.4 \text{ lb/ft}^3 \)

Required: Calculate \( \gamma \) rounded to three significant figures

Correct Solution: Values shown are those given by a calculator but have not been rounded.

\[
V_v = e \cdot V_s = (0.414)(2.49 \text{ ft}^3) = 1.03086 \text{ ft}^3
\]
\[
V_t = V_v + V_s = 1.03086 + 2.49 = 3.52086 \text{ ft}^3
\]
\[
V_w = S \cdot V_v = (0.846)(1.03086 \text{ ft}^3) = 0.87210756 \text{ ft}^3
\]
\[
W_w = \gamma_w \cdot V_w = (62.4 \text{ lb/ft}^3)(0.87210756 \text{ ft}^3) = 54.41951174 \text{ lb}
\]
\[
W_s = G_s \cdot \gamma_w \cdot V_s = (2.72)(62.4 \text{ lb/ft}^3)(2.49 \text{ ft}^3) = 422.62272 \text{ lb}
\]
\[
W_t = W_s + W_w = 422.62272 + 54.41951174 = 477.0422317 \text{ lb}
\]
\[
\gamma = \frac{W_t}{V_t} = \frac{477.0422317 \text{ lb}}{(3.52086 \text{ ft}^3)} = 135.4902586 \text{ lb/ft}^3
\]
Correct Final Answer: \( \gamma = 135 \text{ lb/ft}^3 \)

Solution with All Intermediate Values Rounded to Three Significant Figures:

\[
V_v = e \cdot V_s = (0.414)(2.49 \text{ ft}^3) = 1.03 \text{ ft}^3
\]
\[
V_t = V_v + V_s = 1.03 + 2.49 = 3.52 \text{ ft}^3
\]
\[
V_w = S \cdot V_v = (0.846)(1.03 \text{ ft}^3) = 0.871 \text{ ft}^3
\]
\[
W_w = \gamma_w \cdot V_w = (62.4 \text{ lb/ft}^3)(0.871 \text{ ft}^3) = 54.4 \text{ lb}
\]
\[
W_s = G_s \cdot \gamma_w \cdot V_s = (2.72)(62.4 \text{ lb/ft}^3)(2.49 \text{ ft}^3) = 423 \text{ lb}
\]
\[
W_t = W_s + W_w = 423 + 54.4 = 477 \text{ lb}
\]
\[
\gamma = \frac{W_t}{V_t} = \frac{477 \text{ lb}}{(3.52 \text{ ft}^3)} = 136 \text{ lb/ft}^3
\]
Incorrect Final Answer: \( \gamma = 136 \text{ lb/ft}^3 \)

In general, in Geotechnical Engineering, the values used in calculations are known to about 2 or 3 significant figures. In this class, unless the problem statement tells you to do otherwise, give your final answers to three significant figures.

Summary of Answers for Homework Solutions: After homework is returned, which typically occurs the class period after it is due, a summary of answers to each problem will be provided in the Modules section of CANVAS. Complete homework solutions will NOT be provided.

Quizzes: As discussed in the Reading Assignments section, quizzes may be given at the beginning of class to ensure that students are reading that day’s assignment prior to class. Quizzes may also be given at the end of a lecture to ensure that each student was paying attention and obtaining a basic understanding of the material covered during the lecture. In addition, announced quizzes may be given to assess students’ understanding of important concepts as a supplement to the main exams. For quizzes given at the beginning of class, a student must be in her/his seat at 2:00:00 pm or s/he will not be allowed to take the quiz.

Exams: To pass the course, you must meet both of the following two requirements for the exams: (1) All exams must be taken and a reasonable attempt made to complete each exam; and (2) you must pass (grade of 60 or better) at least one of the exams.
**Attendance:** Attendance at lectures is necessary to learn the material. Missing lectures increases the amount of time you spend on the course and reduces the quality of your educational experience. Attendance is worth 10% of your overall grade (see Grading section on p. 1). Attendance for each class lecture will be graded as follows:

- Arriving on time* and staying for the entire lecture: 100 points
- Missing 5 minutes or less of lecture time (unexcused): 90 points
- Missing more than 5 min. but no more than 15 min. of lecture time (unexcused): 75 points
- Missing more than 15 min. but no more than 30 min. of lecture time (unexcused): 50 points
- Missing more than 30 min. of lecture time (unexcused) will be calculated according to the following equation, where $P$ is the number of points:

\[ P = \frac{x^2}{6!} \left( 4\theta + 3z^3 \right) \tan(0') \]

*Arriving on time means being seated in the classroom, with the appropriate references readily available, and ready for the lecture to begin [not talking, with your cell phone turned off (not on vibrate or silent) and put away].

In addition, any student missing more than six (6) classes with unexcused absences may have his or her grade reduced by 5% per additional class missed. Habitual tardiness may also result in a reduced grade for the class in addition to the reductions in the 10% grade for attendance discussed above. **To pass the course, each student must attend a minimum of 75% of the lectures (including excused absences).** Failure to do so will result in a grade of “E” or “I” for the course.

**Courtesy:** Your instructor will treat you with courtesy at all times. In return, he expects you to give him the same respect. The lectures will begin promptly at 2:00 pm and you should arrive on time. Students who arrive late to class disrupt the students who are already there and the instructor. There should be no talking at any time during the lecture except to ask or answer questions of the instructor. There should be no reading of newspapers, texting, browsing the internet, sleeping, doing homework, or other non-attentive activities during the lecture. **Please turn off all cell phones BEFORE the lecture begins.**

**Course Evaluations:** It is important that each student do a course evaluation at the end of the course. The course evaluations provide feedback to the university and future students as to the quality of instruction in this course. Please take these evaluations serious. To provide incentive for each student to do the evaluation, 25 extra credit points will be added to each student’s homework score who completes his/her course evaluation after the last class period for this course (3:20 pm on Thursday December 7, 2017) and before the final examination period begins (8:00 am on Monday, December 11, 2017). You must notify the instructor, within the specified time frame, via either e-mail or CANVAS message that you have done your evaluation; otherwise, he has no way of knowing that you have done it.
## Tentative Lecture Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 22</td>
<td>Introduction, overexcavation/replacement</td>
<td>HOs 1 and 2; Ch. 1, Sec. 2.1</td>
</tr>
<tr>
<td>Aug 24</td>
<td>Overexcavation/replacement</td>
<td>2.1, 2.5, HO 3</td>
</tr>
<tr>
<td>Aug 29</td>
<td>Overexcavation/replacement</td>
<td>2.2 – 2.5, HO 4</td>
</tr>
<tr>
<td>Aug 31</td>
<td>Near-surface compaction: Equipment and methods</td>
<td>3.1-3.3 (pp. 43-77), HO 5</td>
</tr>
<tr>
<td>Sept 5</td>
<td>Engineering properties and behavior of compacted cohesionless soils</td>
<td>3.4.1 (pp. 77-110)</td>
</tr>
<tr>
<td>Sept 7</td>
<td>Engineering properties and behavior of compacted cohesive soils</td>
<td>3.4.2-3.4.2.2 (pp. 110-145)</td>
</tr>
<tr>
<td>Sept 12</td>
<td>Engineering properties and behavior of compacted cohesive soils</td>
<td>3.4.3.2-3.4.2.6, 3.4.3 (pp. 145-183)</td>
</tr>
<tr>
<td>Sept 14</td>
<td>Compaction control tests; compaction specifications</td>
<td>3.5 (pp. 183-219), HOs 6-9</td>
</tr>
<tr>
<td>Sept 19</td>
<td>Dynamic compaction</td>
<td>4.1, HOs 10-11</td>
</tr>
<tr>
<td>Sept 21</td>
<td>Vibro-compaction and blast densification</td>
<td>4.2-4.3, HO 12-13</td>
</tr>
<tr>
<td>Sept 26</td>
<td>Granular columns: Introduction and types</td>
<td>5.1, HO 13</td>
</tr>
<tr>
<td>Sept 28</td>
<td>Granular columns: Stress concentration and settlement</td>
<td>5.2.1-5.2.2, HO 14-15</td>
</tr>
<tr>
<td>Oct 3</td>
<td>Granular columns: Ultimate bearing capacity, liquefaction control</td>
<td>5.2.3-5.2.4, HOs 16-17</td>
</tr>
<tr>
<td>Oct 5</td>
<td>Granular columns: Slope stability, lateral sliding resistance, uplift</td>
<td>5.2.5-5.2.7, HOs 18-19</td>
</tr>
<tr>
<td>Oct 10</td>
<td>NO CLASS – FALL BREAK</td>
<td></td>
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<tr>
<td>Oct 12</td>
<td>NO CLASS – FALL BREAK</td>
<td></td>
</tr>
<tr>
<td>Oct 17</td>
<td>Preloading, precompression, and vertical drains</td>
<td>6.1-6.3, HOs 20-23</td>
</tr>
<tr>
<td>Oct 19</td>
<td>Preloading, precompression, and vertical drains</td>
<td>6.4-6.6, HOs 24-25</td>
</tr>
<tr>
<td>Oct 24</td>
<td>Chemical stabilization: Introduction, chemicals and reactions</td>
<td>Ch. 7 – pp. 6.271-6.291</td>
</tr>
<tr>
<td>Oct 26</td>
<td>Chemical stabilization: Engineering properties and behavior</td>
<td>Ch. 7 – pp. 6.291-6.317, HO 26</td>
</tr>
<tr>
<td>Oct 31</td>
<td>Chemical stabilization: Construction methods, horiz. &amp; vert. barriers</td>
<td>Ch. 7 – pp. 6.317-6.329</td>
</tr>
<tr>
<td>Nov 2</td>
<td>Soil reinforcement: history and mechanical models</td>
<td>HOs 27-28</td>
</tr>
<tr>
<td>Nov 7</td>
<td>MSE walls and slopes</td>
<td>HOs 27-32</td>
</tr>
<tr>
<td>Nov 9</td>
<td>MSE walls and slopes</td>
<td>HOs 27, 28, 33</td>
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<td>Nov 14</td>
<td>MSE walls and slopes</td>
<td>HOs 27, 28, 33, 34a, 34b</td>
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<tr>
<td>Nov 16</td>
<td>Tiebacks</td>
<td>HOs 35-36</td>
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<tr>
<td>Nov 21</td>
<td>Tiebacks</td>
<td>HOs 37-38</td>
</tr>
<tr>
<td>Nov 23</td>
<td>NO CLASS – THANKSGIVING BREAK</td>
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<tr>
<td>Nov 28</td>
<td>Soil nailing</td>
<td>HOs 39-41</td>
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<tr>
<td>Nov 30</td>
<td>Grouting</td>
<td>HO 42</td>
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<tr>
<td>Dec 5</td>
<td>Grouting</td>
<td>HO 42</td>
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<tr>
<td>Dec 7</td>
<td>Micro and mini-piles, geoweb</td>
<td>HOs 43-44</td>
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</table>

**NOTE:** EXAMS MAY BE EITHER IN CLASS OR TAKE HOME
Journal or Conference Paper Review: Each student is to select and submit a typewritten summary of a geotechnical engineering journal or conference paper related to the topics covered in this course. Scientific journals are located in Marriott Library on the fourth floor and are in the stacks. The most prominent geotechnical engineering journal in the United States is the *Journal of Geotechnical and Geoenvironmental Engineering* (TA705.A525a) published by ASCE. Previous names of this journal include the *Journal of Geotechnical Engineering* (1983-1995, TA705.A525a), the *Journal of the Geotechnical Engineering Division* (1974-1982, TA 705.A525a) and the *Journal of the Soil Mechanics and Foundations Division* (1973 and earlier, TA710.A1 A57). Another prominent U.S. geotechnical engineering journal is the *Geotechnical Testing Journal* (TA710.5 G46) published by ASTM. Some issues of the *Transportation Research Record* (TE7.H542) published by the Transportation Research Board, are devoted to geotechnical engineering issues. Other geotechnical engineering journals of interest to U.S. engineers include *Geotechnique* (British, TA710.A1 G4), the *Canadian Geotechnical Journal* (TA710.A1 C262), *Soils and Foundations* (Japanese, TA710.A1 S54), and *Soil Mechanics and Foundation Engineering* (Russian, TA710.A1 O813). Much information on soil improvement and stabilization is also available in conference proceedings. A partial list of conference proceedings that have a substantial number of papers related to soil improvement and stabilization is given on the next sheet. Submit a copy of the paper to your instructor for approval no later than October 27. During your initial reading of the paper, note concepts, developments, and terms that are confusing or not well understood. Read the paper several times during the term and use other resources to clear up some of the mysteries. Prepare a review of the paper which includes a discussion of the paper's content (emphasizing the main contributions of this paper), points which were not initially clear, and measures taken to increase your understanding. The cover sheet of your review should include at least the following information: (1) A complete reference of the paper (including authors’ names, title of the paper, journal or conference, volume, number, and page numbers); (2) your name; (3) class number and name; (4) instructor’s name; (5) date due or submitted; and (6) typed honor pledge which is signed by you. A photocopy of the paper and your typewritten review of the paper are due on December 18. The review will be graded according to the following criteria:

- **Cover Sheet - 5%**
- **Review of content of the article - 50%**
- **Discussion of concepts not initially understood and methods undertaken to understand the article (including any other references used) - 15%**
- **Quality of the writing, including grammar, syntax, spelling, etc. - 25%**
- **List of references – 5%**

The review should be written such that a geotechnical engineer could read your review and understand the main points of the paper without reading the paper itself. It is necessary that you understand the paper before you can write a review that someone else can understand. Therefore, you likely will need to read to other references (listed in the paper or otherwise) to understand the paper well enough to write a good review. In your review, refer to figures, tables, and equations by number and page (for example: Fig. 7, p. 232) – it is not necessary to reproduce these items.
One of the keys to writing a good review is selecting a journal article that you can understand. Avoid highly theoretical papers in which the mathematics is hard to follow. Generally the best reviews are written on papers that are very practically oriented rather than theoretically oriented, particularly those that contain good experimental (lab and/or field) results. Also, it is recommended that you select a paper on a topic that is of interest to you. This will make the experience of writing the review – and doing the necessary reference work – more enjoyable for you. Spend some time finding a good paper to review – the extra time spent selecting the paper will be more than re-paid in less time required to understand the paper and write the review.

There is no length requirement for the review (either maximum or minimum). However, the review should be long enough to provide the reader with a good understanding of the major points of the paper. In general, most well-written reviews are about 3 to 5 singled-spaced pages.

The most common mistakes that students make are as follows:

1. **Not obtaining approval of the paper to be reviewed from the instructor prior to writing the summary.** You must obtain approval of the paper from the instructor before writing the summary. Otherwise, you run the risk of getting no credit for the summary.

2. **Selecting a topic not related to the course.** Make sure that your paper is approved by the instructor before you write the review. Reviews written on an article not related to this course will not be graded and will be returned to the student, who will then have to do another review on an appropriate paper.

3. **Not including a discussion of concepts not immediately understood and measures taken to increase understanding.** Remember to include this discussion. This is an important part of the learning process (and 15% of the overall grade for the review). You will need to read other references or seek help from others (possibly including the instructor) to understand the paper completely. Also, remember to include a list of other references you use to help you understand the paper.

An example of a well-written journal paper review is available on the course website (HO 1).
PARTIAL LIST OF CONFERENCES CONTAINING SUBSTANTIAL INFORMATION ON SOIL STABILIZATION AND IMPROVEMENT

1978 Symposium on Soil Reinforcing and Stabilising Techniques in Engineering Practice, Sydney, Australia (New South Wales Institute of Technology).


1982 Symposium on Recent Developments in Ground Improvement Techniques, Bangkok, Thailand (published by A. A. Balkema in 1985).


1984 Fourth Australia-New Zealand Geomechanics Conference, Perth (Institution of Engineers, Australia)


1986 In-Situ '86, Use of In Situ Tests in Geotechnical Engineering, Blacksburg, Virginia (ASCE). *TA710.5 .U84 1986*


1987 Symposium on Soil Improvement: A Ten Year Update, ASCE Convention in Atlantic City, New Jersey (ASCE Geotechnical Special Publication No. 12). *TA 710.5588 1987*

1988 Symposium on Geosynthetics for Soil Improvement, in conjunction with the ASCE National Convention in Nashville (ASCE Geotechnical Special Publication No. 18). *TA455.G44 G44 1988*


1991 Geosynthetics '91, Industrial Fabrics Association International


1993  Fly Ash for Soil Improvement (ASCE Geotechnical Special Publication No. 36)  
   TE210.F59 1993
1994  In-Situ Deep Soil Improvement (ASCE Geotech. Special Publication No. 45)  TA710.A1 
   I388 1994
   TA710.S5924 1995
1997  Geosynthetics '97, Industrial Fabrics Association International
1997  Guidelines of Engineering Practice for Braced and Tied-Back Excavations (ASCE)  
   TA730.A44 1997
1997  Ground Improvement, Ground Reinforcement, Ground Treatment (ASCE Geotech. Spec. 
   Publ. No. 69)
1998  Design and Construction of Earth Retaining Systems (ASCE)
1998  Grouts and Grouting: A Potpourri of Projects (ASCE)
1999  Geosynthetics '99, Industrial Fabrics Association International
This policy reflects the mission of the Department of Civil and Environmental Engineering (CVEEN) to promote high professional standards. Its purpose is three-fold: (1) instill ethical work principles, (2) cultivate professional presentation of engineering calculations, and (3) develop problem-solving skills.

**Ethics**

If you are having difficulty understanding a homework assignment, you should seek help from the instructor or teaching assistant for the course. You may work with others in order to understand the concept(s) covered on a homework assignment. However, inappropriate assistance, such as copying solutions from others, from previous years' homework assignment solutions, or from solution manuals is unacceptable. You are not discouraged from studying together, but each student is expected to do their own work and submit their own assignments. Plagiarism of any sort will not be tolerated. Students should also familiarize themselves with the University regulations regarding academic misconduct: [http://www.admin.utah.edu/ppmanual/8/8-10_pdfs/8-10_section_5.pdf](http://www.admin.utah.edu/ppmanual/8/8-10_pdfs/8-10_section_5.pdf). Failure to comply with this policy will result in either reduced credit, rejection of homework which will be considered as non-submittal, or receipt of a failing grade at the discretion of the instructor. Student code of conduct violations will be pursued in accordance with University Policy.

**Format**

Your homework assignment solution must adhere to the following formatting rules.

1. Use only one side of 8.5 x 11 inch paper. Use engineering paper and pencil for handwritten solutions. Computer printouts must be on white paper. Each problem must be started on a separate piece of paper.

2. All solutions must be neatly written (or electronically generated), well organized, and logical. For engineering homework problems, the following sequence of categories should be used and will be required in your classes:
   a) Statement of Problem
   b) Required
   c) Assumptions
   d) Solution
   e) Summary of Answers

3. Number, title, and label each graph or table required by the assignment.

4. Generally, graphs should be drawn on a separate piece of paper (one graph per page) and should take up most of the page.

5. Use the same justification (left, center, right, or decimal) for all data in a table.

6. Sample calculations must accompany computer spreadsheet solutions.

7. Your name, the course number, assignment number, and problem number must appear on the top of each sheet of the assignment. Number the pages.

8. Bind the assignment with one metal staple in the upper left hand corner of the pages. Do not use paper clips or dog-eared pages.

A style guide is included in the appendix to this document. (Note: This style guide is available on the course website and is titled *Homework Requirements.pdf.*)
Syllabus for CVEEN 7350, Fall 2017

COLEGE OF ENGINEERING GUIDELINES

Appeals Procedures
See the Code of Student Rights and Responsibilities, located in the Class Schedule or on the UgU Web site for more details.

Appeals of Grades and other Academic Actions
If a student believes that an academic action is arbitrary or capricious he/she should discuss the action with the involved faculty member and attempt to resolve. If unable to resolve, the student may appeal the action in accordance with the following procedure:
1. Appeal to Department Chair (in writing) within 40 business days; chair must notify student of a decision within 15 days. If faculty member or student disagrees with decision, then,
2. Appeal to Academic Appeals Committee (see http://www.coe.utah.edu/current_undergrad/appeal.php for members of committee). See II Section D, Code of Student Rights and Responsibilities for details on Academic Appeals Committee hearings.

Withdrawal Procedures
See the Class Schedule or web for more details. Please note the difference between the terms “drop” and “withdraw”. Drop implies that the student will not be held financially responsible and a “W” will not be listed on the transcript. Withdraw means that a “W” will appear on the student’s transcript and tuition will be charged. **

Drop Period – No Penalty
Students may DROP any class without penalty or permission during the FIRST TEN academic days of the term (Friday, September 1st).

Withdrawal from Full Term Length Classes
Students may WITHDRAW from classes without professor’s permission until Friday, October 20, 2017. Beginning September 2nd until October 20th, a “W” will appear on the transcript AND tuition will be charged. Refer to Class Schedule, Tuition and Fees for tuition information.

Withdrawal from Session I & Session II
See the web page for details: http://registrar.utah.edu/academic-calendars/fall2017.php
Withdrawals after October 20th will only be granted due to compelling, nonacademic emergencies. A petition and supporting documentation must be submitted to the Dean’s Office, 1602 Warnock Engineering Building. Petitions must be received before the last day of classes (December 7, 2017).

Americans with Disabilities Act (ADA)
The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you need accommodations in a class, reasonable prior notice needs to be given to the instructor and to the Center for Disability Services, 162 Olpin Union, 581-5020 (V/TDD) to make arrangements for accommodations. All written information in a course can be made available in alternative format with prior notification to the Center for Disability Services.

Adding Classes
Please read carefully: All classes must be added within 10 academic days of the beginning of the semester (deadline: Friday, September 1st). Late adds will be allowed September 2 - September 11, requiring only the instructor’s signature. Any request to add a class after September 11th will require signatures from the instructor, department, and Dean, and need to be accompanied by a petition letter to the Dean’s office. **

A $50 FEE WILL BE ASSESSED BY THE REGISTRAR’S OFFICE FOR ADDING CLASSES AFTER SEPTEMBER 11TH. **

Repeating Courses
When a College of Engineering class is taken more than once, only the grade for the second attempt is counted. Grades of W, I, or V on the student’s record count as having taken the class. Departments enforce these guidelines for other courses as well (e.g., math, physics biology, chemistry). Attempts of courses taken at transfer institutions count as one attempt. This means a student may take the course only one time at the University of Utah. Courses taken at the University of Utah may not be taken a second time at another institution. If a second attempt is needed, it must be at the University of Utah. Please work with your department advisor to determine the value of repeating courses. Students should note that anyone who takes a required class twice and does not have a satisfactory grade the second time may not be able to graduate. It is the responsibility of the student to work with the department of their major to determine how this policy applies in extenuating circumstances.