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Overview
Geotechnical engineering deals with earth materials including soil, rock, and groundwater. As most engineering projects are supported by ground, geotechnical engineering interfaces with most of the other civil sub-disciplines. For example, geotechnical engineers design foundations for structures, sub-grade for roadways, embankments for water storage and flood control, and containment systems for hazardous materials. In addition to participating in the design, construction, and operation of most civil engineering projects, geotechnical engineers also deal with various geologic hazards impacting our society, such as landslides, soil erosion, and earthquakes. Employers for graduates specializing in geotechnical engineering include consulting firms, design firms, contractors, public agencies, utilities, energy companies, and academia.

The geotechnical faculty at TAMU presently has active research programs in thrust areas that include expansive soils, scour and erosion, construction quality control, seafloor foundations and anchors, and stability of seafloor slopes. Graduate course offerings include engineering properties of soils, geomechanics, numerical methods in geotechnical engineering, foundation design, slope and retaining wall design, foundations on expansive soils, site investigations, and geotechnical earthquake engineering. Graduate degree options include the Master of Engineering, Master of Science, and Doctor of Philosophy.

**Faculty Members**

**Administration**

- **Department Head:** John Niedzwecki
- **Division Head:** Mary Beth Hueste
- **Assistant Department Head for Graduate Programs:** Mark Burris

**Geotechnical Engineering Faculty**

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aubeny, Charles</td>
<td>979-845-4478</td>
<td><a href="mailto:caubeny@civil.tamu.edu">caubeny@civil.tamu.edu</a></td>
</tr>
<tr>
<td>Biscontin, Giovanna</td>
<td>979-845-6303</td>
<td><a href="mailto:gbiscontin@civil.tamu.edu">gbiscontin@civil.tamu.edu</a></td>
</tr>
<tr>
<td>Briaud, Jean-Louis</td>
<td>979-845-3795</td>
<td><a href="mailto:briaud@tamu.edu">briaud@tamu.edu</a></td>
</tr>
<tr>
<td>Medina-Cetina, Zenon</td>
<td>979-845-6567</td>
<td><a href="mailto:zmedina@civil.tamu.edu">zmedina@civil.tamu.edu</a></td>
</tr>
<tr>
<td>Sanchez, Marcelo</td>
<td>979-862-6604</td>
<td><a href="mailto:msanchez@civil.tamu.edu">msanchez@civil.tamu.edu</a></td>
</tr>
</tbody>
</table>
Degree Programs
Degree of Master of Engineering

A minimum of 30 semester credit hours of approved courses is required for the Master of Engineering degree (MEng). The university places limitations on these credit hours in addition to the requirements of the Geotechnical engineering program that are listed below. **Approximately one-third of the required 30 credit hours of coursework must be taken in fields outside of the major field.** A complete discussion of all university requirements is found in the current Texas A&M University Graduate Catalog (available on the Internet at http://catalog.tamu.edu/) under the heading “The Degree of Master of Engineering.”

A. Advising Committee

The Master of Engineering program has a standard advisory committee. For students starting in the academic year 2012-13, this committee has one departmental member:

- Dr. Giovanna Biscontin

No other members are required for this degree plan.

B. Prerequisites

All of the following courses are considered prerequisite to the MEng program of study in Geotechnical engineering: CVEN 302, CVEN 305, CVEN 365, and MATH 308, or equivalents that are approved by the Geotechnical engineering program. Courses listed for which a student lacks credit must be completed, but those credits cannot be applied toward the 30 semester credit hour requirement. Pre-requisite coursework needs to be completed during your first semester at Texas A&M University, as they are pre-requisites for all our graduate courses.

C. Degree Plan

A standard degree plan has been devised for all Master of Engineering Students. Courses may only be changed to the proscribed alternates by the approval of the advising committee (Dr. Biscontin).

The proposed degree plan must be typed on the official form as it appears on the Internet at http://ogs.tamu.edu/ and submitted electronically to your graduate advisor and advisory committee for their electronic endorsement. Master of Engineering students are expected to submit their degree plan within 1 month of starting their coursework.
1. **Standard Degree Plan – MEng Students Starting Fall 2012**

   **Fall Semester (10 hours)**
   - CVEN 649 Physical and Engineering Properties of Soil (R)
   - CVEN 651 Geomechanics (*R)
   - 1 elective course outside geotechnical engineering

   **Spring Semester (9-12 hours)**
   - CVEN 667 Slope Stability and Retaining Structures (R)
   - CVEN 687 Foundation Engineering (R)
   - CVEN 646 Foundations on Expansive Soils and/or
   - CVEN 683 Dynamic Soil Structure Interaction (***)

   **Fall Semester (9-12 hours)**
   - CVEN 647 Numerical Methods in Geomechanics (*R)
   - or
   - CVEN 673 Transport Phenomena in Porous Media (***)
   - CVEN 685 Directed Studies (R)
   - 1-2 elective courses outside geotechnical engineering

   **Notation:**
   - R: Required course (no substitutions allowed);
   - *R: one of CVEN 651 and CVEN 647 is required. Both courses may be taken or the student may take one of the courses in either semester
   - ***: This course counts towards the 9 credit hours outside geotechnical engineering

2. **Elective Coursework outside geotechnical engineering**

The following courses are some suggested electives for the MEng degree plan. You may choose one elective from the following [note not all courses may be offered] or propose another suitable course to your committee for approval:

- CVEN 603 Environmental Management (Spring)
- CVEN 606 Environmental Engineering Design (Fall)
- CVEN 613 Micromechanics of Civil Engineering Materials (Fall)
- CVEN 615 Structural Design of Pavements (Spring)
- CVEN 618 Environmental Engineering Processes I (Fall)
- CVEN 633 Advanced Mechanics of Materials (Fall)
- CVEN 656 Bridge Engineering (Fall)
- CVEN 657 Dynamic Loads and Structural Behavior (Fall)
CVEN 658 Civil Applications of GIS (Fall)
CVEN 673 Transport Phenomena in Porous Media
CVEN 674 Groundwater Hydrology (Spring)
CVEN 686 Offshore and Coastal Structures (Spring)
CVEN 689 Special Topics in Stochastic Mechanics
CVEN 752 Smart Structures (Spring)
CVEN 753 Damage Mechanics (Spring)
CVEN 766 Highway Design (Spring)
GEOG 626 Fluvial Geomorphology
GEOL 635 Engineering Geology
GEOL 664 Mechanical Analysis in Geology
GEOP 413 Near Surface Geophysics (Fall)
GEOP 435 Methods of Geophysical Exploration (Fall)
GEOP 615 Experimental Rock Deformation (Fall)
MATH 601 Methods of Applied Mathematics I (Every Semester)
MEMA 646 Introduction to the Finite Element Method
MEMA 647 Theory of Finite Elements
OCEN 672 Coastal Engineering
OCEN 674 Ports and Harbors
OCEN 676 Dynamics of Offshore Structures
OCEN 688 Marine Dredging
OCNG 430 Introduction to Geological Oceanography (Fall)
OCNG 630 Geological Oceanography
OCNG 670 Deep Sea Sediments
STAT 601 Statistical Analysis (Every Semester)
STAT 651 Statistics in Research I (Every Semester)

D. Writing Requirement and Waiver of Final Exam

The University has a writing requirement for all graduate degrees. You will be writing a report as part of the CVEN 685 Directed Studies course that will be used to satisfy this requirement. At the same time you submit your report(s), you should submit your request for the Waiver of Final Exam form, which is available online through Office of Graduate Studies. Once your report has been reviewed and certified to meet the writing requirements, the waiver form will be signed.

You must provide a minimum of 2 weeks for the review of the report and for the form to be signed. It is your responsibility to ensure enough time is provided in order to meet the deadlines by the university’s Office of Graduate Studies (http://ogs.tamu.edu/).
The writing requirement may be fulfilled by taking CVEN 685 with any of the geotechnical professors, as long as a written report is completed and approved as part of the directed studies experience. You need to notify Dr. Biscontin as soon as the decision is made if you will be taking CVEN 685 from one of the other geotechnical professors. Otherwise, you need to contact Dr. Biscontin during the Spring enrollment period or at the latest before the end of the Spring semester to obtain your CVEN 685 project assignment.

Degree of Master of Science

A minimum of 32 semester credit hours of approved courses is required for the Master of Science degree (MS). At least 25 semester credit hours must be coursework. The university places limitations on these credit hours in addition to the requirements of the geotechnical engineering program that are listed below. A complete discussion of all university requirements is found in the current Texas A&M University Graduate Catalog (available on the Internet at http://catalog.tamu.edu/) under the heading “The Degree of Master of Engineering For example, university requirements include a final examination and submission of a thesis to the university.

A. Degree Plan

The student must identify their research supervisor before the start of their second semester of study, at which point an advisory committee will be formed. The student’s advisory committee, in consultation with the student, will develop the proposed degree plan. The proposed degree plan must be typed on the official form as it appears on the Internet at http://ogs.tamu.edu/ and submitted electronically to your graduate advisor and advisory committee for their electronic endorsement. The office of graduate studies blocks students from further registration if a degree plan is not filed before the end of their second semester of study. If you are blocked, you are not considered a full time student and become ineligible to receive any assistantship.

B. Prerequisites

All of the following courses are considered prerequisite to the MS program of study in geotechnical engineering: CVEN 302, CVEN 305, CVEN 365, and MATH 308, or equivalents that are approved by the geotechnical engineering program. Courses listed for which a student lacks credit must be completed, but those credits cannot be applied toward the 32 semester credit hour requirement. Note that you may have been required to complete additional pre-requisites as part of your admission into the program. Those classes also cannot be applied towards the degree credit hour requirement.
Required Coursework (18 semester credit hours):

1. **Soil Behavior and Geomechanics – 9 semester credit hours**

   - CVEN 649 Physical and Engineering Properties of Soil (R)
   - CVEN 651 Geomechanics (*R)
   - CVEN 647 Numerical Methods in Geotechnical Engineering (*R)
   - CVEN 645 Geotechnical Site Investigations
   - CVEN 648 Advanced Numerical Methods in Geotechnical Engineering
   - CVEN 673 Transport Phenomena in Porous Media
   - CVEN 683 Dynamic Soil Structure Interaction
   - CVEN 689 Special Topics in Stochastic Geomechanics
   - MEMA 647 Theory of Finite Elements Analysis

2. **Geotechnical Design – 9 semester credit hours**

   - CVEN 667 Slope Stability and Retaining Walls (R)
   - CVEN 687 Foundation Engineering (R)
   - CVEN 646 Foundations on Expansive Soils
   - CVEN 652 Soil Dynamics
   - CVEN 666 Geotechnical Design (*)

R: Required course (no substitutions allowed);
*R: one of CVEN 651 and CVEN 647 is required. Both courses may be taken or the student may take one of the courses in either semester
*: CVEN 666 may not be taken in substitution of CVEN 687

C. **Elective Coursework (14 semester credit hours):**

The student’s advisory committee, in consultation with the student, will select a minimum of 14 additional semester credit hours of coursework to complement the overall objectives of the proposed degree plan. A maximum of 7 semester credit hours of CVEN 691 Research can be applied toward this requirement. All courses listed under Soil Behavior and Geomechanics and Geotechnical Design can be used to satisfy this requirement as well. The first two courses taken are used to satisfy the core coursework requirement, while additional courses in that group automatically can count towards elective requirements without prior approval.

1. **Courses Offered Within the Department (typically alternate years)**

The following is a list of some of the courses offered through the Civil Engineering Department that are specifically geared towards the master’s level
• CVEN 603 Environmental Management (Spring)
• CVEN 606 Environmental Engineering Design (Fall)
• CVEN 613 Micromechanics of Civil Engineering Materials (Fall)
• CVEN 615 Structural Design of Pavements (Spring)
• CVEN 618 Environmental Engineering Processes I (Fall)
• CVEN 633 Advanced Mechanics of Materials (Fall)
• CVEN 656 Bridge Engineering (Fall)
• CVEN 657 Dynamic Loads and Structural Behavior (Fall)
• CVEN 658 Civil Applications of GIS (Fall)
• CVEN 673 Transport Phenomena in Porous Media
• CVEN 674 Groundwater Hydrology (Spring)
• CVEN 686 Offshore and Coastal Structures (Spring)
• CVEN 689 Special Topics in Stochastic Mechanics
• CVEN 752 Smart Structures (Spring)
• CVEN 753 Damage Mechanics (Spring)
• CVEN 766 Highway Design (Spring)

Additional graduate level courses are offered throughout the department and may be used to satisfy the elective coursework requirement with approval of the student’s advisory committee. Particularly for the MS degree, courses must be chosen so as to complement your research program.

2. Additional Technical Elective Courses: Applied Math and Other Engineering Disciplines

The following courses are some suggested electives for the MEng degree plan. You must choose one elective from the following [note not all courses may be offered]:

• AGRO 626 Soil mineralogy
• GEOG 626 Fluvial Geomorphology
• GEOL 635 Engineering Geology
• GEOL 664 Mechanical Analysis in Geology
• GEOP 413 Near Surface Geophysics (Fall)
• GEOP 435 Methods of Geophysical Exploration (Fall)
• GEOP 615 Experimental Rock Deformation (Fall)
• MATH 601 Methods of Applied Mathematics I (Every Semester)
• MEMA 646 Introduction to the Finite Element Method
• MEMA 647 Theory of Finite Elements
• OCEN 672 Coastal Engineering
• OCEN 674 Ports and Harbors
• OCEN 676 Dynamics of Offshore Structures
• OCEN 688 Marine Dredging
• OCNG 430 Introduction to Geological Oceanography (Fall)
• OCNG 630 Geological Oceanography
• OCNG 670 Deep Sea Sediments
• STAT 601 Statistical Analysis (Every Semester)
• STAT 651 Statistics in Research I (Every Semester)

3. Other Relevant Non-Technical Coursework – maximum of 6 semester hours

Certain courses being offered under Architecture and the Business School are directly relevant to geotechnical engineering practice and a maximum of 6 semester credit hours may be counted towards the required coursework. Courses pre-approved for the MS degree are:

• ACCT 640  Accounting Concepts and Procedures
• FINC 635  Financial Management for Non-Business
• MGMT 655  Survey of Management
• MKTG 621  Survey of Marketing

Doctor of Philosophy

The Doctor of Philosophy (Ph.D.) degree is a research-oriented degree requiring a minimum of 64 semester credit hours of approved courses and research beyond the Master of Science (M.S.) degree [96 credit hours beyond the Bachelor of Science (B.S.) degree]. The university places limitations on these credit hours in addition to the requirements of the Department of Civil Engineering and the Geotechnical Engineering program listed below.

A complete discussion of all university requirements is found in the current Texas A&M University Graduate Catalog (available on the Internet at http://catalog.tamu.edu/ under the heading “The Degree of Doctor of Philosophy.” For example, university requirements include a preliminary examination, a final examination, and submission of a dissertation to the university.
NOTE: All documents requiring departmental signatures must be submitted to the Civil Engineering Graduate Office at least one day prior to the Office of Graduate Studies deadline.

D. Departmental Requirements

In addition to fulfilling the University requirements for the Doctor of Philosophy (Ph.D.) degree, a student enrolled in the Civil Engineering graduate program in the area of Geotechnical Engineering must satisfy the following department requirements.

- A minimum of 32 credit hours of graduate level coursework taken through Texas A&M University [a minimum of 24 credit hours if the student already has taken at least another 24 credit hours of graduate course work for the Master of Science (M.S.) or Master of Engineering (MEng) degree].

- Remaining coursework requirement can be met by 32 hours of CVEN 691

E. Geotechnical Engineering Requirements

The student must also satisfy the following area requirements and/or recommendations described below:

- **Qualifying Exam:** A Qualifying Examination will be scheduled with members of the Geotechnical Engineering faculty. The exam will include both written and oral components. The exam should be taken after the first semester (Fall or Spring) of study and no later than the end of the second semester (Fall or Spring) of study. In the geotechnical area, the written component is typically taken the week before the second semester of study.
  
  o The written component includes an essay type question. The other questions will be intended to judge the understanding of basic material and may include both undergraduate and graduate (Master’s) level material.
  o The oral exam will typically be administered no later than 2 weeks after the written unless there are special circumstances. The oral may be used to probe further into some of the questions in the written part, to explore breadth or depth of knowledge, and to assess oral communication skills.
  o The results of the written exam may be:
    - Fail, last chance if failed previously.
    - Fail, can be retaken again the next time it is offered.
    - Pass. Take the oral
  o The results of the total exam, after taking the oral may be
    - Fail, last chance if failed previously.
    - Fail, can be retaken again the next time it is offered.
• Conditional Pass with requirements to take technical or English courses and pass them, if the committee feels that the candidate is deficient in some areas but otherwise qualified.

• Unconditional Pass.

  o Students must satisfy the language proficiency requirements before taking the Qualifying exam. These are: 600 or more on the TOEFL, 70 or more in the English language Proficiency Examination (ELPE), or a grade of at least B in the English Language Institute (ELI) courses at the 300 level or higher.

• **Degree Plan:** An advisory committee must be formed and a Degree Plan must be submitted and approved by the advisory committee after passing the Qualifying Exam and before course registration during their second semester (Fall or Spring) of study. The proposed degree plan must be typed on the official form as it appears on the Internet at http://ogs.tamu.edu/ with endorsements by the student’s advisory committee.

• **Written Preliminary Exam:** After completion of the coursework listed on the Degree Plan (with the exception of CVEN 691 Research), but no later than the end of the fifth semester (Fall or Spring) of study, a Written Preliminary Examination will be scheduled with members of the advisory committee. This exam consists of written questions from the advisory committee. The exam in total should be given over a period of one week.

• **Research Proposal:** As soon as the research project can be outlined in reasonable detail, but no later than the end of the fifth semester (Fall or Spring) of study, the dissertation research proposal should be completed. The Research Proposal shall describe the proposed research, including relevant background information, and clearly demonstrate how this research will make a unique contribution of new knowledge to the student’s area of study. Upon approval of the Research Proposal by the advisory committee chair, the Research Proposal must be submitted to other members of the advisory committee at least 2 weeks (10 working days) prior to the Oral Preliminary Exam.

• **Oral Preliminary Exam:** After passing the Written Preliminary Exam, but no later than the end of the fifth semester (Fall or Spring) of study, an Oral Preliminary Examination will be scheduled with members of the advisory committee. At this examination, the student will give a presentation of the Research Proposal. The questions in this exam will cover the Written Preliminary Exam, the Oral Preliminary Exam presentation, and any relevant coursework.
• **Completion of Dissertation:** Upon approval of the Dissertation by the advisory committee chair, the Dissertation will be submitted to the other members of the advisory committee at least 2 weeks (10 working days) prior to the Final Defense.

• **Final Defense:** A Final Defense consisting of an oral examination will be scheduled with all of the advisory committee members. At this examination, the student will give a presentation of the research work completed for the degree and documented in the Dissertation. The student is encouraged to invite other interested individuals to the research presentation.

F. Coursework:

The student’s advisory committee, in consultation with the student, will select coursework to complement the overall objectives of the proposed degree plan. Particularly for the Ph.D. degree, courses must be chosen so as to complement your research program as well as any future career goals. The courses listed below will typically have other graduate level courses as pre-requisites.

1. **Courses within Specialty Area Geared for Research Students**

<table>
<thead>
<tr>
<th>Course</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVEN 648</td>
<td>Advanced Numerical Methods in Geotechnical Engineering</td>
</tr>
<tr>
<td>CVEN 683</td>
<td>Dynamic Soil Structure Interaction</td>
</tr>
<tr>
<td>CVEN 699</td>
<td>Engineering Risk Analysis</td>
</tr>
<tr>
<td>CVEN 689</td>
<td>Special Topics in Stochastic Mechanics</td>
</tr>
<tr>
<td>MEMA 647</td>
<td>Theory of Finite Element Analysis</td>
</tr>
</tbody>
</table>

2. **Graduate Courses required for MEng and MS students**

The courses listed below are the core course requirements for our masters students. The same courses are required of all our Ph.D. students. An exception is made for students who obtained their MS or MEng in geotechnical engineering at Texas A&M University. These courses frequently serve as pre-requisite courses for higher level courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVEN 649</td>
<td>Physical and Engineering Properties of Soil</td>
</tr>
<tr>
<td>CVEN 651</td>
<td>Geomechanics</td>
</tr>
<tr>
<td>CVEN 647</td>
<td>Numerical Methods in Geotechnical Engineering</td>
</tr>
<tr>
<td>CVEN 667</td>
<td>Slope Stability and Retaining Walls</td>
</tr>
<tr>
<td>CVEN 687</td>
<td>Foundation Engineering</td>
</tr>
</tbody>
</table>
Students are required to take one of these courses as part of their doctoral program to: (1) ensure knowledge of design codes if their corresponding graduate coursework was in another country, or (2) their master’s degree was not in civil engineering and their curriculum would benefit from these core courses for a possible future in academia, or even in practice, within civil engineering.

The following courses are recommended for the MS and MEng students. While none of these courses are required for our doctoral students, these frequently serve as pre-requisite courses for higher level courses. Most students admitted into our program have already taken these courses as part of their own master’s curriculum.

<table>
<thead>
<tr>
<th>Course</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVEN 645 Geotechnical Site Investigations</td>
<td>Alternate years</td>
</tr>
<tr>
<td>CVEN 646 Foundations on Expansive Soils</td>
<td>Alternate years</td>
</tr>
<tr>
<td>CVEN 652 Soil Dynamics</td>
<td>Alternate years</td>
</tr>
<tr>
<td>CVEN 673 Transport Phenomena in Porous Media</td>
<td>Alternate Years</td>
</tr>
</tbody>
</table>

3. Additional Graduate Elective Courses within Department

The courses listed below are also offered within the Department and may be applicable to a student depending to their research focus:

<table>
<thead>
<tr>
<th>Course</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVEN 613 Micromechanics of Civil Engineering Materials</td>
<td>Alternate Years</td>
</tr>
<tr>
<td>CVEN 658 Civil Engineering Applications of GIS</td>
<td></td>
</tr>
<tr>
<td>CVEN 686 Offshore and Coastal Structures</td>
<td>Alternate Years</td>
</tr>
</tbody>
</table>

Several other courses are available throughout the department that may also be applicable. Some recommended courses include:

- AGRO 626 Soil Mineralogy
- CVEN 633 Advanced Mechanics of Materials (Fall)
- CVEN 657 Dynamic Loads and Structural Behavior (Fall)
- CVEN 658 Civil Applications of GIS (Fall)
- CVEN 674 Groundwater Hydrology (Spring)
- CVEN 686 Offshore and Coastal Structures (Spring)
- CVEN 752 Smart Structures (Spring)
- GEOG 626 Fluvial Geomorphology
• GEOL 635 Engineering Geology
• GEOL 664 Mechanical Analysis in Geology
• GEOP 413 Near Surface Geophysics (Fall)
• GEOP 435 Methods of Geophysical Exploration (Fall)
• GEOP 615 Experimental Rock Deformation (Fall)
• MATH 601 Methods of Applied Mathematics I (Every Semester)
• MATH 602 Methods in Applied Partial Differential Equations
• MEMA 601 Theory of Elasticity
• MEMA 602 Continuum Mechanics
• MEMA 605 Energy Methods
• MEMA 611 Fundamentals of Engineering Fracture Mechanics
• MEMA 641 Plasticity Theory
• MEMA 647 Theory of Finite Element Analysis
• MEMA 648 Nonlinear Finite Element Methods in Structural Mechanics
• OCEN 672 Coastal Engineering
• OCEN 674 Ports and Harbors
• OCEN 676 Dynamics of Offshore Structures
• OCEN 688 Marine Dredging
• OCNG 430 Introduction to Geological Oceanography (Fall)
• OCNG 630 Geological Oceanography
• OCNG 670 Deep Sea Sediments
• STAT 601 Statistical Analysis (Every Semester)
• STAT 651 Statistics in Research I (Every Semester)
Pre-requisite Coursework

All of the following courses (and their pre-requisites) are considered prerequisite to any graduate program of study in geotechnical engineering:

- CVEN 302 – Computer Applications in Engineering and Construction
- CVEN 305 – Mechanics of Materials
- CVEN 365 – Introduction to Geotechnical Engineering
- MATH 308 – Differential Equations

None of these courses may be counted towards any graduate degree in geotechnical engineering.

You may have been required to complete additional pre-requisites as part of your admission into the program. Those classes also cannot be applied towards the credit hour requirement. Pre-requisite coursework needs to be completed during your first semester at Texas A&M University, as they are pre-requisites for all our courses.

If you completed a pre-requisite before arriving at Texas A&M University and need it waived, you must bring a copy of your transcript showing the final grade in the course as well as a copy of the course syllabus to Dr. Biscontin. You can drop it off in her box or with the Administrative Assistant on the 8th floor of the CE/TTI Building. These will then be reviewed to see if indeed they satisfy the requirements, at which time this information will be communicated to the Civil Graduate Office. The review process can take up to two weeks.

Course Description & Typical Schedule

A range of courses are offered within the Zachry Department of Civil Engineering. For a full listing and description of the courses, please refer to the Graduate Course Catalog. Keep in mind that graduate courses are typically only offered once a year at most, with many of the elective courses only being offered on alternate years.
The following courses are currently *tentatively* being offered this upcoming spring 2013 semester:

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisites</th>
<th>Typical Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVEN 645 Geotechnical Site Investigations</td>
<td>365</td>
<td>Infrequently</td>
</tr>
<tr>
<td>CVEN 646 Foundations on Expansive Soils</td>
<td>365, Math 308</td>
<td>Every spring</td>
</tr>
<tr>
<td>CVEN 647 Numerical Methods in Geotechnical Engineering</td>
<td>Engr Degree</td>
<td>Fall, alternate years</td>
</tr>
<tr>
<td>CVEN 648 Advanced Numerical Methods in Geotechnical Engineering</td>
<td>651, MEMA 646</td>
<td>Fall, alternate years</td>
</tr>
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<td>CVEN 649 Physical and Engineering Properties of Soils</td>
<td>365, 435</td>
<td>Every fall</td>
</tr>
<tr>
<td>CVEN 651 Geomechanics</td>
<td>365</td>
<td>Fall, alternate years</td>
</tr>
<tr>
<td>CVEN 652 Soil Dynamics</td>
<td>Math 308</td>
<td>Spring, alternate years</td>
</tr>
<tr>
<td>CVEN 667 Slope Stability and Retaining Structures</td>
<td>365</td>
<td>Every spring</td>
</tr>
<tr>
<td>CVEN 673 Transport Phenomena in Porous Media</td>
<td>311, Math 308</td>
<td>Fall, alternate years</td>
</tr>
<tr>
<td>CVEN 683 Dynamic Soil-Structure Interaction</td>
<td>657</td>
<td>Spring, alternate years</td>
</tr>
<tr>
<td>CVEN 687 Foundation Engineering</td>
<td>365</td>
<td>Every spring</td>
</tr>
<tr>
<td>CVEN 698 Special Topics in Stochastic Mechanics</td>
<td></td>
<td>Spring, alternate years</td>
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</tbody>
</table>
Funding Opportunities
Research Assistantships

Research Assistantship (RA) positions are offered through individual faculty members. There is no centralized list of available positions. You'll need to set-up appointments to meet with them individually. You are strongly recommended to go through our department’s web site to identify the different research areas each professor is working in before meeting with them.

Teaching Assistantships

New students are automatically considered for the small number of available positions based on their graduate application package. For all other students, a call for those interested in TA positions for future semesters will typically occur around the 10th week of the semester. Please wait for the email announcement and/or posted fliers announcing that TA applications.

If you are an international student, you must have satisfactorily passed the ELPE exam before being considered for a TA position.

Fellowships

Fellowships are typically awarded to incoming students, and there is no formal application process. Any requests for fellowships must come from your research advisor, who is recommending you for this award, to Dr. Mary Beth Hueste or Dr. Biscontin, who coordinates those awards for our division.

Tuition Waivers & In-state Tuition

For doctoral students, research (GRA) and teaching assistantship (GTA) positions include coverage of tuition. For MS and MEng students a GTA position does not cover any tuition, but grants out-of-state tuition waiver if you are an international or out-of-state student. Additionally, you can qualify for in-state tuition if you are awarded a Fellowship.

Other job opportunities

The faculty and graduate advisors do not coordinate nor know of any student worker positions in the department. If you are interested or need to pursue job opportunities beyond the TA/RA positions, you may want to look at: http://jobforaggies.com
Additional Information
Full-Time Enrollment

Required credit hours to be certified as a full-time are:

- Fall and Spring semesters: 9 hours
- 10-week summer semester: 6 hours

Graduate students may be certified as full time with fewer than the required hours under special circumstances, including:

- During their final semester before graduation;
- Presence of a documented disability that mandates a reduced course load

These exceptions may or may not apply to a student’s eligibility for certain types of financial aid. Students who have questions about how exceptions to the full time enrollment requirements will affect their scholarships, loans, grants, etc., should confer with their financial aid counselor.

In most cases, international students are eligible for the same exceptions to full time requirements; however, all international students requesting an exception to full time requirements must have their request approved by International Student Services. Students who are not U.S. citizens, but who are permanent U.S. residents are not required to clear with ISS on enrollment exceptions.

A student who is enrolled in less than a full-time course of study at Texas A&M may be in jeopardy of:

- being out of compliance with the Bureau of Citizenship and Immigration Services (formerly INS) if enrolled at Texas A&M on a student visa;
- losing their Research or Teaching Assistantship position
- losing insurance coverage under his or her parent/guardian’s insurance policy;
- being placed on a loan repayment schedule by a lender or guarantor if the student is the recipient of Federal financial aid; and/or
- losing a scholarship if the guidelines for receiving the scholarship require full-time enrollment, etc.
Mailboxes

All graduate students will have a mailbox assigned to them on the 7th floor of the CE/TTI building. They usually get created for new students by the 2nd or 3rd week of classes. You must get in the habit of checking that mailbox on a regular basis, as sometimes critical information from the University and/or Department will be sent to your campus mailbox rather than your mailing address.

Student Offices

Offices for students who are Teaching Assistants are assigned through the main CE Graduate Advising Office for geotechnical engineering students. You are responsible for contacting Ms. Maxine Williams for a desk assignment.

For students who become involved in research, desk assignments are coordinated by Ms. Vickie Garcia, the Administrative Assistant on the 7th floor of the CE/TTI building. Once you start working on a research project with your advisor, you need to see her about a desk. There is currently a waiting list, so do not expect an immediate desk assignment. The department is currently working to open up additional office space for graduate students.

Academic Probation

Graduate students must maintain 3.0 GPR. This requirement includes courses in degree plan as well as all graduate courses taken. If a course is repeated, the last grade received will be the one utilized in GPR calculation. If a student’s GPR falls below 3.0, the student will need to meet with their graduate advisor to set out a plan to raise GPR to above 3.0 within one semester. Under extenuating circumstances, a second semester may be allowed for the student to raise their GPR.

Once a plan has been devised, it will be forwarded to the main CE Graduate Office. If the student fails to raise their GPR, they will be removed from the geotechnical engineering graduate program.
Frequently Asked Questions
Degree Plans

1. **What is the difference between the MS and MENG degree?**

   - MEng (Master of Engineering) - non-thesis option requiring 30 hours of graduate credit
   - MS (Master of Science) - thesis option requiring 32 hours of graduate credit

   Accordingly, the MS degree is more research oriented and MENG is more course oriented and geared towards professional practice.

2. **I have taken a graduate level course in which I got a C. This course is already present on my degree plan. Can I keep the course on the degree plan?**

   Yes. The requirement for graduate students is to maintain a GPA of 3.0 on the degree plan. The intent of the degree plan is to identify the appropriate course of study for your chosen degree as determined by your advisor. Once the courses have been chosen and place on an approved degree plan, it is the student’s responsibility to maintain a 3.0.

   It is NOT the intent of the degree plan to allow students to take courses and then, after taking the courses and receiving a grade, to choose whether or not the courses are to be included in the degree plan. A student is NOT to choose only those courses for inclusion in the degree plan for which he/she may receive grades of A or B!

3. **Can I change the courses on my degree plan once it is filed?**

   Yes, the student can change the courses by filing a Petition. The Petition must be signed by ALL committee members AND the department head. The Petition must subsequently be filed with the Office of Graduate Studies (OGS) and approved.

4. **Can I change my degree status once I’ve been admitted?**

   Yes, once admitted to graduate school, a student may file a Petition to change a degree status. The Petition must be signed by the department head and then filed with the Office of Graduate Studies (OGS) and approved. International students must check with the International Student Services Office to maintain legal status.

5. **Can I change my degree status once a degree plan is filed?**

   Yes, the student must file a Petition that is available electronically through the Office of Graduate Studies (OGS) website. The Petition will include any changes needed to the degree plan. The Petition must be signed by ALL committee members AND the department head.
The Petition must subsequently be filed with the Office of Graduate Studies (OGS) and approved

6. **Are leveling courses to be included in the degree plan even though they cannot be counted towards the required number of credits?**

Leveling courses should be listed at the bottom of the degree plan as prerequisites.

7. **Who should be on my degree plan committee?**

   MEng degree committee: a standard committee for all students

   - Chair: Dr. G. Biscontin

   MS and PhD degree committee: students must identify a professor within the area of geotechnical engineering to serve as their research advisor, who serves as the chair. Other members will be selected based on discussions with the committee chair, with at least one member from outside the CVEN department.

8. **When should I file the degree plan?**

   MEng degree: students should file within one month of starting their graduate coursework.

   PhD and MS students: students must file before preregistration of the second semester, summer semester excluded.

   Keep in mind: the Office of Graduate Studies will block you from registration after completing 9 hours of graduate courses. If you do not register, you run the risk of losing your full-time student status.

**Assistantships**

1. **There are two different types of courses for the summer, 5-week courses and 10-week courses? How can I register to satisfy the full-time status for my RA/TA?**

   To be considered a full-time student for the Summer, a student must register for a minimum of 6 credit hours in one of the two following ways:

   - 6 credit hours during the 10-week summer term OR
   - 3 credit hours during each 5-week summer term

   To hold an assistantship for the Spring and Fall semesters, the student needs to register for a minimum of 9 hours in order to be considered full-time.
No other combinations are allowed.

2. **How do I apply for a Research Assistant (RA) position?**

In order to apply for a RA, a student must contact the professors in geotechnical engineering. The individual professors handle funding and will be able to inform students about openings for research positions.

3. **I am a foreign student and English is my second language. Can I apply for a TA? What is the requirement?**

International students whose native language is not English and who wish to apply for a TA position must fulfill an English proficiency requirement. The English Proficiency Certification is required before a graduate student is eligible to apply to serve as a TA or in any other position considered to be a teaching position.

It is best to meet this proficiency requirement early in a student's program. More information on the English Language Proficiency Exam (ELPE) are available at: [http://mars.tamu.edu/elpe.htm](http://mars.tamu.edu/elpe.htm)

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### Probation

1. **What are the criteria on probation?**

Graduate students are expected to maintain a Grade Point Ratio (GPR) equal to or better than 3.0 throughout the duration of their graduate study. This requirement applies to each of cumulative, degree plan, and semester GPR. It is also a prerequisite for receiving a graduate degree in civil engineering.

2. **What happens after one semester on probation if my GPR is not back up to 3.0?**

When a student's GPR (either cumulative, degree plan or semester) falls below 3.0, the student is placed on probation by the department. Notifications are made by letter to the student, the advisor, and other pertinent offices within the university. The student must then meet with their graduate advisor and determine a plan to bring their GPR up to a 3.0 within one semester.

3. **What if the GPR requirement is satisfied after one semester, but falls again below 3.0 in another semester?**

If after one semester on probation a student's cumulative or degree plan GPR is not back up to 3.0, the Office of Graduate Studies will be asked to remove the student from the graduate
studies program. If extenuating circumstances exist, probation time may be extended for one more semester, allowing the student a final chance to meet the minimum GPR requirement.

4. *I took a course in which I got an “I” for incomplete. After one semester, it becomes an “F”. Now I am on probation. What can I do to change the F back to a better grade?*

The student must complete the course work for which an “I” was received by submitting it to the professor. The professor will then submit a grade change form. This change may or may not change the student’s GPR, depending on the final grade received. The student will remain on probation until the registrar has changed the grade in the system.

5. *Does “I” (incomplete) in 691 (research) 684 (professional internship), or 692 (Professional study) become an “F” after one semester?*

No, these courses are excluded from that rule.

6. *Does an “I” (incomplete) of 685 (problems) become an “F” after one semester?*

Yes, if you receive an “I” in 685, it will turn to an “F” after one semester. The course 685 is a letter grade course and therefore is not excluded from the rule.

7. *The grade for one of my courses shows up as an “X” in my transcript. What does this mean?*

An “X” indicates that a grade was not entered during the grading period. Hopefully, the professor simply made a mistake and inadvertently the grade was not recorded. Speak to the instructor for the course and ask them to submit a grade change form.