



TEXAS A&M
UNIVERSITY

Structural Engineering Graduate Student Handbook

Zachry Department of Civil & Environmental Engineering

2019-2020

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Overview



Program Overview

Structural engineering is the field of engineering particularly concerned with the design of load-bearing structures. The field crosses engineering disciplines, and structural engineering can be found within civil, mechanical, and aerospace engineering. Within civil engineering, it is largely the implementation of mechanics to the design of the large structures that are fundamental to basic living, such as buildings, bridges, walls, dams, and tunnels.

An experienced engineer would tend to design more complex structures, such as multistory buildings (including skyscrapers) or bridges. It is in the design of these more complex systems that a structural engineer must draw upon creativity in the application of mechanics principles. New structural systems and novel application of materials result from this process, and new technologies, such as control and damage detection systems, are now found in civil engineering structures, where traditionally they were only found in mechanical or aerospace systems. Courses at the graduate level build the basic structural knowledge of the traditional systems and materials of our field and expose students to new technologies and approaches that will become part of standard practice within the career of our students.

Research areas of our faculty include:

- Building, Transportation, & Offshore Structures
- Damage Detection and Assessment
- Engineering Risk Analysis
- Fatigue & Fracture
- Preservation of Historic Structures
- Resilience & Sustainability
- Seismic & Wind Performance
- Smart Materials & Structures
- Structural Reliability
- Vibrations, Sensing & Control



Faculty Members

Administration

Department Head:

Robin Autenrieth

Division Head:

Stefan Hurlebaus

Associate Dept. Head – Graduate Programs

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Structural Engineering Faculty

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FACULTY RESEARCH INTERESTS

	<p>Dr. Luciana R. Barroso Associate Professor</p>
	<p>Professor Barroso's research interests include structural health monitoring; structural control using active, passive and semi-active devices for multi-hazard mitigation; linear and nonlinear dynamics of structures; finite element modeling; probabilistic hazard analysis; engineering education.</p>
	<p>Dr. Anna Birely Associate Professor</p>
	<p>Professor Birely's research interests include reinforced concrete structures; earthquake engineering; performance-based design; fire resistance of structures.</p>
	<p>Dr. Joe Bracci Professor</p>
	<p>Professor Bracci's research interests include the behavior, adequacy, preservation, and sustainability of building and bridge infrastructure that are exposed to a variety of slow-forming degrading material mechanisms and also to rapid-forming hazardous environmental loading.</p>
	<p>Dr. Mary Beth Hueste Professor</p>
	<p>Professor Hueste's research interests include earthquake resistant design of reinforced concrete structures, structural rehabilitation and repair including seismic retrofitting, performance-based seismic design, probabilistic assessment of structural performance, and design and evaluation of prestressed concrete bridge structures.</p>
	<p>Dr. Stefan Hurlebaus Professor</p>
	<p>Professor Hurlebaus' research interests include smart structures, structural health monitoring, nondestructive testing, structural control, large scale testing, historic preservation, and railroad engineering.</p>

	<p>Dr. Peter Keating Associate Professor</p>
	<p>Professor Keating’s research interests include fatigue and fracture of welded structures; structural analysis and design; experimental stress analysis</p>

	<p>Dr. Maria Koliou Assistant Professor</p>
	<p>Professor Koliou’s research interests include structural dynamics; earthquake engineering; collapse assessment of structural systems; multi-hazard performance-based design; system functionality; community resilience; risk and reliability analysis; experimental methods in structural engineering; seismic performance of electrical substation equipment.</p>

	<p>Dr. Lee Lowery Senior Professor</p>
	<p>Professor Lowery’s research interests include structural failure analysis; structural design and analysis; offshore and coastal structures; instrumentation and experimental testing; structural foundations; computer programming and engineering applications</p>

	<p>Dr. John Mander Professor</p>
	<p>Professor Mander’s research interests include reinforced, pre-stressed and structural concrete; earthquake engineering and structural dynamics; blast resistant design; bridge engineering; hazard analysis and financial loss estimation and mitigation; railroad engineering; construction and design integration.</p>

	<p>Dr. John Niedzwecki Professor</p>
	<p>Professor Niedzwecki’s research interests include structural dynamics; probabilistic and statistical methods; structural system reliability; multi-hazard design methods including the prediction of lightning interaction with structures, analysis and design of deepwater and coastal structures, green energy systems.</p>

	<p>Dr. Arash Noshadravan Assistant Professor</p>
	<p>Professor Noshadravan’s research interests include computational and probabilistic mechanics, multiscale modeling of materials, structural mechanics, uncertainty modelling and analysis, risk and reliability analysis, predictive analytics and model reduction, life cycle assessment.</p>

	<p>Dr. Stephanie Paal Assistant Professor</p>
	<p>Professor Paal’s research interests include disaster assessment and routine inspection of civil infrastructure, machine vision, structural health monitoring techniques, earthquake engineering and analysis of reinforced concrete structures.</p>

	<p>Dr. Petros Sideris Assistant Professor</p>
	<p>Professor Sideris’ research interests include development of damage-resistant bridge systems against seismic and other hazards, accelerated bridge construction, novel materials, performance-based design and assessment of reinforced concrete structures, aging effects, experimental methods and large-scale structural testing, energy harvesting from structural vibrations, numerical methods and software development.</p>

	<p>Dr. Matthew Yarnold Assistant Professor</p>
	<p>Professor Yarnold’s research interests include structural steel behavior; bridge engineering; field experimental assessment of structural systems; novel techniques for structural health monitoring.</p>

Degree Programs



Degree of Master of Science – Non-Thesis

A minimum of 30 semester credit hours of approved courses is required for the Master of Science – Non-Thesis degree (MS-NT). The university places limitations on these credit hours in addition to the requirements of the structural engineering program that are listed below. A complete discussion of all university requirements is found in the current Texas A&M University Graduate Catalog under the heading “The Degree of Master of Science” (available on the Internet at <https://catalog.tamu.edu>)

A. Advising Committee

The Master of Science – Non-Thesis (MS-NT) program for structural engineering has a standard advisory committee with only one departmental member:

- Dr. Joe Bracci (chair)

No external members are required for this degree plan. It is permissible for another faculty member from Structural Engineering Faculty to serve as your committee chair. In that event, unless explicitly waived, Dr. Bracci should be added as a committee member to double check that all requirements for the Master of Science – Non-Thesis degree are met.

B. Prerequisites

The following courses (*and their pre- and co-requisite coursework*) are considered prerequisite to the MS-NT program of study in structural engineering: CVEN 302, CVEN 345, CVEN 363, CVEN 444, CVEN 445, and CVEN 446, or equivalents that are approved by the structural engineering program. Courses listed for which a student lacks credit must be completed, but those credits cannot be applied toward the 30 credit hours degree requirement. Prerequisite coursework needs to be completed during your first semester at Texas A&M University, as they are prerequisites for all our graduate courses.

C. Degree Plan

The degree plan for Master of Science – Non-Thesis has a set of common courses and elective courses listed are chosen to enhance the overall education for a practicing structural engineer.

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 Science – Non-Thesis students are expected to submit their degree plan within 1 month after the start of their second semester.



D. Required Coursework – 18 hours

1. Engineering Mechanics – 9 semester credit hours

- CVEN 633 Advanced Mechanics of Materials (typically in Fall) or CVEN 663 Structural Stability (every 2 years)
- CVEN 657 Dynamic Loads and Structural Behavior (typically in Fall)
- An introductory course in structural finite element analysis. The recommended course is:
 - CVEN 750 Finite Element Theory and Applications in Structural Engineering (typically in Spring).

With the approval from the committee chair, alternatives are:

- MEEN 672 Introduction to Finite Element Analysis (typically in Fall).
- MEMA 646 An Introduction to the Finite Element Method (typically in Spring)
- MEMA 647 Theory of Finite Elements (occasionally offered)

2. Structural Behavior and Design – 6 semester credit hours

You are required to take at least two structural design courses – one from each group listed below. The other course in each group can be also be selected for your degree plan as targeted elective courses, depending on individual student interest as well as course availability:

Group 1:

- CVEN 671 Behavior and Design of Prestressed Concrete Structures (typically in Fall)
- CVEN 621 Advanced Reinforced Concrete Design (typically in Spring)

Group 2:

- CVEN 659 Behavior and Design of Steel Structures (typically in Spring)
- CVEN 670 Behavior and Design of Composite Structures (occasionally offered)

3. Structural System Design – 3 semester credit hours

- CVEN 754 Structural Design Studio (typically in Spring)

4. Seminar – 0 or 1 semester credit hours

All Master of Science students are required to enroll in 2 semesters of CVEN 681 Seminar taught on a bi-weekly basis. Students can enroll for 0 or 1 semester credit hours and at most count 1 credit hour towards their degree plan under Open Elective Coursework below.



E. Elective Coursework – 12 hours

The student will select a minimum of 12 additional semester credit hours of coursework to complement the overall objectives of the proposed degree plan. A *maximum* of 3 semester credit hours of CVEN 685 Directed Studies can be applied toward this requirement.

Note that the electives are broken up into two groups: (1) Targeted Electives, and (2) Open Electives. At least 9 credit hours of your elective coursework must come from courses listed in the Targeted Electives group. The Targeted Elective group includes courses with a strong mathematical, solid mechanics and/or structural engineering content. The remaining 3 credit hours may come from either group of courses.

1. Targeted (Technical) Elective Courses – minimum of 9 hours

Three of your elective courses must come from courses listed in this group:

- CVEN 631 – System Identification and Nondestructive Damage Evaluation
- CVEN 655 – Structural Reliability
- CVEN 656 – Bridge Engineering
- CVEN 662 – Experimental Methods in Civil Engineering
- CVEN 663 – Structural Stability
- CVEN 669 – Design of Structures for Hazardous Environmental Loads
- CVEN 686 – Offshore and Coastal Structures
- CVEN 751 – Advanced Dynamics and Structural Control
- CVEN 752 – Smart Structures
- CVEN 648 – Advanced Numerical Methods in Geotechnical Engineering
- CVEN 651 – Geomechanics
- CVEN 652 – Soil Dynamics (typically every other Spring)
- CVEN 666 – Foundation Structures (typically every Fall)
- CVEN 683 – Dynamic Soil Structure Interaction
- CVEN 685 – Special Problems (3 hrs maximum)
- CVEN 687 – Foundation Engineering (typically every other Spring)
- CVEN 695 – Frontiers in Civil Engineering Research (variable credit hours 1-6)
- CVEN 699 – Engineering Risk Analysis

All four courses listed under Structural Behavior and Design can be used to satisfy this elective 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.

Additional technical coursework related to the practice of structural engineering can be found outside the department. Those courses are:

- MATH 601 – Methods in Applied Mathematics I
- MATH 602 – Methods in Applied Partial Differential Equations



- STAT 601 – Statistical Analysis
- STAT 626 – Methods in Time Series Analysis

Any other course that is not listed above can only be counted to satisfy the Targeted Elective Courses with approval from the Committee Chair.

2. Open Elective Course – maximum of 3 hours

Additional courses that are not part of the targeted electives and that are relevant to structural engineering practice can be part of the degree plan. This includes some technical courses in other engineering areas, such as materials engineering and construction engineering. A *maximum* of 3 semester credit hours may be counted towards the required coursework. Some courses within civil engineering fall within this category, as well as some courses offered under Architecture and the Business School. Courses that are pre-approved for the MS-NT degree:

- CVEN 681 (0/1 hr) – Seminar
- CVEN 684 (1 hr) - Internship
- CVEN 749 (1 hr) – Advanced Visualization & BIM in Structural Engineering Design
- CVEN 624 – Infrastructure Engineering
- CVEN 643 – Advanced Construction Methods and Analysis
- CVEN 641 – Construction Engineering Systems
- CVEN 644 – Project Risk Management
- ACCT 640 – Accounting Concepts and Procedures
- MGMT 655 – Survey of Management
- FINC 635 – Financial Management for Non-Business
- MKTG 621 – Survey of Marketing
- ARCH 628 – Tools for Green Building Design
- ARCH 646 – Historic Preservation Theory and Practice
- ARCH 648 – Building Preservation Technology
- ARCH 653 – Building Information Modeling (BIM) in Architecture
- COSC 626 – Mechanical and Electrical Construction (HVAC Systems)

Any other course that is not listed above can only be counted to satisfy the Open Elective Course with approval from the Committee Chair.

1. Sample Degree Plan:

Fall Semester (13 hours)

- CVEN 633 – Advanced Mechanics of Materials (Required)
- CVEN 657 – Dynamic Loads and Structural Behavior (Required)
- CVEN 671 – Behavior and Design of Prestressed Concrete Structures (Design Req't)



- CVEN 666 – Foundation Structures (Targeted Elective)
- CVEN 681 (0 hr) – Seminar
- CVEN 749 (1 hr) – Advanced Visualization & BIM in Structural Engineering Design

Spring Semester (13 hours)

- CVEN 750 – Finite Element Applications in Structural Engineering (Required)
- CVEN 754 – Structural Design Studio (Required)
- CVEN 659 – Behavior and Design of Steel Structures (Design Req't)
- CVEN 662 – Experimental Methods in Civil Engineering (Targeted Elective)
- CVEN 681 (1 hr) - Seminar

Summer Semester (4 hours)

- One targeted elective course
- CVEN 684 Internship (1 hr)



Degree of Master of Science - Thesis

A minimum of 30 semester credit hours of approved courses is required for the Master of Science – Thesis degree (MS-T). At least 24 semester credit hours must be coursework and the remainder are CVEN 691 research credit hours. The university places limitations on these credit hours in addition to the requirements of the structural engineering program that are listed below. A complete discussion of all university requirements is found in the current Texas A&M University Graduate Catalog under the heading “The Degree of Master of Science” (available on the Internet at <https://catalog.tamu.edu>).

A. Advising Committee

The student must select an Advisory Committee Chair, who will serve as their graduate advisor, from the Department’s structural engineering graduate faculty. A student can have a Co-Chair from a faculty member that does not have an appointment with the Department’s structural engineering group. A committee must have either one Chair or one Chair and one Co-Chair.

The chair and the student collaborate in selecting the remainder of the Advisory Committee. The advising committee for the Master of Science - Thesis degree in structural engineering must have a minimum of three members from the Texas A&M graduate faculty (the chair counts as a member). There must be at least one member from outside the civil & environmental engineering department and there must be a majority from the Department’s structural engineering graduate faculty.

B. 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 including at least one full time structural engineering faculty member. 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 within 1 month after the start of their second semester. If you are blocked, you are not considered a full-time student and become ineligible to receive any assistantship.



C. Prerequisites

The following courses (*and their pre- and co-requisite coursework*) are considered prerequisite to the MS program of study in structural engineering: CVEN 302, CVEN 345, CVEN 363, CVEN 444, CVEN 445, and CVEN 446, or equivalents that are approved by the structural engineering program. Courses listed for which a student lacks credit must be completed, but those credits cannot be applied toward the 30 credit hours degree requirement. Note that you may have been required to complete additional prerequisites as part of your admission into the program. Those classes also cannot be applied towards the degree credit hour requirement

D. Required Coursework (18 semester credit hours):

All of the following courses are offered once each academic year unless otherwise noted.

1. *Applied Mathematics – 3 semester credit hours*

- Any 600-level course in Applied Mathematics, Statistics, or Numerical Methods. Recommended courses are:
 - MATH 601 – Methods in Applied Mathematics I
 - MATH 602 – Methods in Applied Partial Differential Equations
 - STAT 601 – Statistical Analysis
 - STAT 626 – Methods in Time Series Analysis

2. *Engineering Mechanics – 9 semester credit hours*

- CVEN 633 Advanced Mechanics of Materials (typically in Fall) or CVEN 663 Structural Stability (every 2 years)
- CVEN 657 Dynamic Loads and Structural Behavior (typically in Fall)
- An introductory course in structural finite element analysis. The recommended course is:
 - CVEN 750 Finite Element Theory and Applications in Structural Engineering (typically in Spring).

With the approval from the committee chair, alternatives are:

- MEEN 672 Introduction to Finite Element Analysis (typically in Fall).
- MEMA 646 An Introduction to the Finite Element Method (typically in Spring)
- MEMA 647 Theory of Finite Elements (occasionally offered)

3. *Structural Behavior and Design – 6 semester credit hours*

You are required to take at least two structural design courses – one from each group listed below. The other course in each group can be also be selected for your degree plan as an elective, depending on individual student interest as well as course availability:



Group 1:

- CVEN 671 Behavior and Design of Prestressed Concrete Structures (typically in Fall)
- CVEN 621 Advanced Reinforced Concrete Design (typically in Spring)

Group 2:

- CVEN 659 Behavior and Design of Steel Structures (typically in Spring)
- CVEN 670 Behavior and Design of Composite Structures (occasionally offered)

4. **Seminar – 0 or 1 semester credit hours**

All Master of Science students are required to enroll in 2 semesters of CVEN 681 Seminar taught on a bi-weekly basis. Students can enroll for 0 or 1 semester credit hours and at most count 1 credit hour towards their degree plan under Elective Coursework below.

E. Elective Coursework (12 semester credit hours):

The student's advisory committee, in consultation with the student, will select a minimum of 12 additional semester credit hours of coursework to complement the overall objectives of the proposed degree plan. A *maximum* of 3 semester credit hours of CVEN 685 Directed Studies can be applied toward this requirement. A maximum of 6 semester credit hours of CVEN 691 Research can be applied toward this requirement.

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

The following is a list of some of the courses offered through the Civil & Environmental Engineering Department that are specifically geared towards the master's level

- CVEN 681 (0/1 hr) - Seminar
- CVEN 631 – System Identification and Nondestructive Damage Evaluation
- CVEN 656 – Bridge Engineering
- CVEN 662 - Experimental Methods in Civil Engineering
- CVEN 663 – Structural Stability
- CVEN 669 – Design of Structures for Hazardous Environmental Loads
- CVEN 686 – Offshore and Coastal Structures
- CVEN 699 – Engineering Risk Analysis
- CVEN 687 – Foundation Engineering
- CVEN 655 – Structural Reliability
- CVEN 683 – Dynamic Soil Structure Interaction
- CVEN 695 – Frontiers in Civil Engineering Research (variable credit hours 1-6)
- CVEN 751 – Advanced Dynamics and Control
- CVEN 752 – Smart Structures
- CVEN 753 – Damage Mechanics of Solids and Structures



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-T degree, courses must be chosen so as to complement your research program. All four courses listed under *Structural Behavior and 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.

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

Additional coursework related to the practice of structural engineering can be found outside the department. Courses listed under MEMA, MATH and STAT can be particularly applicable, and any graduate level course in those departments is automatically acceptable pending approval of the student's chair. Some suggested courses:

- MEMA 601 Theory of Elasticity
- MEMA 602 Continuum Mechanics
- MEMA 605 Energy Methods
- MEMA 633 Theory of Plates and Shells

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

Certain courses being offered under Architecture and the Business School are directly relevant to structural engineering practice and a *maximum* of 3 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
- ARCH 646 Historic Preservation Theory and Practice
- ARCH 647 Recording of Historic Buildings
- ARCH 648 Building Preservation Technology



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 (MS-T or MS-NT) or Master of Engineering (M.E.) degree in an approved and related program [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 & Environmental Engineering and the Structural Engineering program listed below. A complete discussion of all university requirements is found in the current Texas A&M University Graduate Catalog under the heading “The Degree of Doctor of Philosophy” (available on the Internet at <https://catalog.tamu.edu>). 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 & Environmental Engineering Graduate Office at least one day prior to the Office of Graduate Studies deadline.

A. Advising Committee

The student must select an Advisory Committee Chair, who will serve as their graduate advisor, from the Department’s structural engineering graduate faculty. A student can have a Co-Chair from a faculty member that does not have an appointment with the Department’s structural engineering group. A committee must have either one Chair or one Chair and one Co-Chair.

The chair and the student collaborate in selecting the remainder of the Advisory Committee. The advising committee for the PhD degree in structural engineering must have a minimum of four members from the Texas A&M graduate faculty (the chair counts as a member). There must be at least one member from outside the civil & environmental engineering department and there must be a majority from within the department, with at least two members being from the structural engineering faculty (the chair counts as one of these members).

B. Departmental Requirements

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

- For the 64 credit hours PhD program beyond the M.S. degree, a minimum of 24 credit hours of graduate level coursework is required provided 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 (M.E.) degree.

- For the 96 credit hours PhD program beyond the B.S. degree, a minimum of 48 credit hours of graduate level coursework is required.
- For both PhD programs, a *maximum* of 3 semester credit hours of CVEN 685 Directed Studies can be applied toward this requirement.

C. Structures Area Requirements

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

- *Seminar – 0 or 1 semester credit hours:* All Ph.D. degree seeking students are required to enroll in 4 semesters of CVEN 681 Seminar taught on a bi-weekly basis. Students can enroll for 0 or 1 semester credit hours and at most count 1 credit hour towards their degree plan under Coursework below.
- *Qualifying Exam:* A Qualifying Examination will be scheduled with members of the Structural Engineering faculty. The exam should be taken prior to the student's second semester (Fall or Spring) of study. A student may get special approval for a time extension of one additional semester if leveling courses (either technical or in English language) are required. For direct to PhD students, the exam should be taken prior to the student's fourth semester of study. The exam will include both written and oral sessions (closed book) based on materials from the basic undergraduate structures courses: Statics; Dynamic; Mechanics of Materials; and Structural Analysis. A list of topics from each course is listed below. If equations are needed and expected to be used to solve problems in the closed book sessions, students will be provided a list of standard formulas. However, students should be able to derive basic equations and exam questions can require that they be derived from fundamental principles. Once the student's written exam is graded and determined to have passed that portion of the exam, an oral examination will be scheduled usually during the first or second weeks of the semester. The purpose of the oral exam is twofold: 1. to explore any fundamental deficiencies that were uncovered during the written exam (students should prepare to answer these questions again during the oral exam); and 2. to make sure that the student possesses reasonable oral communication skills required to solve and articulate engineering problems. The committee will make an immediate pass/fail decision at the end of the oral exam. If a student fails the qualifying exam the first time, they are allowed to take both portions of the exam a second time at the start of the next semester (fall or spring). If a student fails the qualifying exam a second time, they will be terminated from the PhD program.



- CVEN 221 Engineering Mechanics: Statics
 - Units; Newton's Laws; General Principles of Mechanics
 - Concurrent Force Systems
 - Statics of Particles
 - Equivalent Force/Moment Systems
 - Centroids and Center of Gravity
 - Equilibrium of Rigid Bodies
 - Trusses, Frames and Machines
 - Internal Forces in Structural Members
 - Friction
 - Second Moments of Area

- CVEN 363 Engineering Mechanics: Dynamics
 - Kinematics of Particles
 - Kinetics of a Particle: Force and Acceleration
 - Kinetics of a Particle: Work and Energy
 - Kinetics of a Particle: Impulse and Momentum
 - Planar Kinematics of a Rigid Body
 - Planar Kinetics of a Rigid Body: Force and Acceleration
 - Planar Kinetics of a Rigid Body: Work and Energy
 - Planar Kinetics of a Rigid Body: Impulse and Momentum

- CVEN 305 Mechanics of Materials
 - Stress and Strain – Axial Loading
 - Stress and Strain – Torsion
 - Stress and Strain – Pure Bending
 - Analysis of Beams for Bending and Shear
 - Shear Stresses in Beams and Thin-Walled Members
 - Transformation of Stress and Strain
 - Deflection of Beams
 - Columns

- CVEN 345 Theory of Structures
 - Loads on Structures
 - Static Determinacy and Stability
 - Statically Determinant Trusses – Methods of Joints and Sections
 - Statically Determinant Beams and Frames
 - Virtual Work Method for Calculating Deflection
 - Indeterminant Structures by Flexibility Method
 - Influence Lines for Determinant and Indeterminant Structures
 - Approximate Analysis of Indeterminant Structures – inflection points, portal method, and cantilever method.
 - Analysis of Structures by Stiffness Method - Introduction



- Degree Plan: An advisory committee must be formed that includes at least two structural engineering faculty members, and a Degree Plan must be submitted and approved by the advisory committee after passing the Qualifying Exam and early during their second semester (Fall or Spring) of study. The degree plan must be filed before the course registration for the third semester 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 a majority of the coursework listed on the Degree Plan (with the exception of CVEN 691 Research), but ideally no later than the end of the fourth semester (Fall or Spring) of study, a Written Preliminary Examination will be scheduled with members of the advisory committee. The specific scope is defined by the committee members and may include any topic in structural engineering. The goal is to get preliminary feedback early during the research process, so the preliminary exam should not be delayed. This exam consists of written questions from the advisory committee. The exam in total should be given over a period of one week. The Office of Graduate Studies (OGS) requires that this exam be completed at least 90 days before the final defense.
- Oral Preliminary Exam: After passing the Written Preliminary Exam, but ideally no later than the end of the fourth semester (Fall or Spring) of study, an Oral Preliminary Examination will be scheduled with members of the advisory committee. The goal is to get preliminary feedback early during the research process, so the preliminary exam should not be delayed. At this examination, the student will give a presentation of the Research Proposal. The questions in this exam will cover the material in the Research Proposal, Written Preliminary Exam, the Oral Preliminary Exam presentation, and any relevant coursework. The Office of Graduate Studies (OGS) requires that this exam be completed at least 90 days before the final defense.
- Research Proposal: As soon as the research project can be outlined in reasonable detail, but ideally 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.
- 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.

D. Recommended Coursework:

The student's advisory committee, in consultation with the student, will select coursework to complement the overall objectives of the proposed degree plan, with the majority of courses being in the field of structural engineering. 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 prerequisites.

1. Courses within Specialty Area Geared for Research Students

Course		Frequency
CVEN 655	Structural Reliability	Alternate Years
CVEN 662	Experimental Methods in Civil Engineering	Alternate Years
CVEN 663	Structural Stability	Alternate Years
CVEN 683	Dynamic Soil Structure Interaction	Alternate Years
CVEN 631	System Identification and Nondestructive Eval.	Alternate Years
CVEN 751	Advanced Dynamics & Control	Alternate Years
CVEN 752	Smart Structures	Alternate Years
CVEN 699	Engineering Risk Analysis	Alternate Years

2. Graduate Courses required for MS-NT and MS-T students

The courses listed below are part of the core course requirements for our master's students. While none of these courses are required for our doctoral students, they frequently serve as prerequisite courses for higher level courses. Most students admitted into our program have already taken these courses as part of their own master's curriculum.

Course		Frequency
CVEN 621	Advanced Reinforced Concrete Design	Yearly
CVEN 633	Advanced Mechanics of Materials	Yearly
CVEN 657	Dynamic Loads and Structural Behavior	Yearly
CVEN 659	Behavior and Design of Steel Structures	Yearly
CVEN 671	Behavior and Design of Prestressed Concrete Structures	Yearly

A student may decide to take one of these courses as part of their doctoral program to: (1) explore differences in design codes if their corresponding undergraduate 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.

3. Additional Graduate Elective Courses within Department

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

Course		Frequency
CVEN 656	Bridge Engineering	Alternate Years
CVEN 669	Design of Structures for Hazardous Environmental Loads	Alternate Years
CVEN 686	Offshore and Coastal Structures	Alternate Years
CVEN 753	Damage Mechanics of Solids and Structures	Alternate Years

Note that doctoral students are NOT allowed to enroll in:

- CVEN 754 – Advanced Structural Design Studio

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

CVEN 613	Micromechanics of Civil Materials
CVEN 623	Nondestructive Pavement Evaluation
CVEN 658	Civil Engineering Applications of GIS
CVEN 644	Project Risk Management
CVEN 740	Advanced Construction and Behavior of Cement Materials

Additional coursework related to the practice of structural engineering can be found outside the department. Courses listed under MEMA, MATH and STAT can be particularly applicable. Some suggested courses:

MEMA 601	Theory of Elasticity
MEMA 602	Continuum Mechanics
MEMA 605	Energy Methods
MEMA 611	Fundamentals of Engineering Fracture Mechanics
MEMA 633	Theory of Plates and Shells
MEMA 641	Plasticity Theory
MEMA 646	Introduction to the Finite Element Method
MEMA 647	Theory of Finite Element Analysis
MEMA 648	Nonlinear Finite Element Methods in Structural Mechanics
MATH 601	Methods of Applied Mathematics I
MATH 602	Methods and Applications of Partial Differential Equations
STAT 601	Statistical Analysis



Graduate Coursework



Prerequisite Coursework

The following courses (*and their pre- and co-requisite coursework*) are considered prerequisite to any graduate program of study in structural engineering:

CVEN 302 – Computer Applications in Engineering and Construction

CVEN 345 – Theory of Structures

CVEN 363 – Engineering Mechanics – Dynamics (minimum of particle and rigid body dynamics)

CVEN 444 – Structural Concrete Design

CVEN 445 – Matrix Methods of Structural Analysis

CVEN 446 – Structural Steel Design

None of these courses may be counted towards any graduate degree in structural engineering. You may have been required to complete additional prerequisites as part of your admission into the program. Those classes also cannot be applied towards the degree credit hour requirement. Prerequisite coursework needs to be completed during your first semester at Texas A&M University, as they are prerequisites for all our courses. It may be possible to take some prerequisite course along with graduate courses with the permission of the Graduate Advisor (Dr. Bracci) and the course instructors.

If you completed a prerequisite 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. Bracci (or send by email). These will then be reviewed to see if indeed they satisfy the requirements, at which time this information will be communicated to the Civil and Environmental Engineering 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 & Environmental 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 is a table indicating the typical course offering frequency and suggested prerequisites. Keep in mind that the actual course offering schedule may differ from the table below. Prerequisite coursework listed are course numbers in the Civil & Environmental Engineering department unless otherwise noted. Keep in mind that all graduate courses have



the program prerequisites automatically applied, and any graduate course with a listed prerequisite also has the option of "by approval of the instructor."

Dept	No	Title	Pre-Requisites	Typical Frequency
CVEN	621	Advanced Reinforced Concrete Design	444	spring
CVEN	631	Identification of Civil Engineering Systems		alternate years
CVEN	633	Advanced Mechanics of Materials		fall
CVEN	655	Structural Reliability		alternate years
CVEN	656	Bridge Engineering		alternate years
CVEN	657	Dynamic Loads and Structural Behavior	363	fall
CVEN	659	Behavior and Design of Steel Structures	446	spring
CVEN	662	Experimental Methods in Civil Engineering		alternate years
CVEN	663	Structural Stability		alternate years
CVEN	669	Design of Structures for Hazardous Environmental Loads	657	alternate years
CVEN	670	Behavior and Design of Composite Structures	444, 446	alternate years
CVEN	671	Behavior and Design of Prestressed Concrete Structures	444	fall
CVEN	683	Dynamic Soil Structure Interaction		alternate years
CVEN	686	Offshore and Coastal Structures	657	alternate years
CVEN	699	Engineering Risk Analysis		alternate years
CVEN	750	Finite Element Theory & Applications in Structural Engineering	445	spring
CVEN	751	Advanced Dynamics and Introduction to Structural Control	CVEN 657 and MEMA 647	alternate years
CVEN	752	Smart Structures	363	alternate years
CVEN	753	Damage Mechanics of Solids and Structures	633	alternate years
CVEN	754	Advanced Structural Design Studio	659, 621/671	spring

Transfer Credit

A maximum of three courses taken at other universities may be applied towards your Master's degree (MS-NT or MS-T) at Texas A&M University. For the doctoral program, courses may be applied from other universities, pending permission of the student's research committee, as long as: (a) the number of credit hours do not exceed one-third of the total coursework hours taken at Texas A&M University and (b) the courses were not used towards the completion of any other degree.

In order to use transfer courses on your degree plan, the courses must have been taken in residence at an accredited U.S. institution or an approved international institution. You can verify its status with either Graduate Admissions or International Admissions. In addition, you must have earned a grade of "B" or better, and you must have been in degree seeking status at either that institution or at Texas A&M University at the time the course(s) were taken. Academic work used toward a previous degree may not be used again.

To receive departmental approval, the student must submit a detailed syllabus and sample coursework material to the structures graduate advisor after starting with the structures program. That material will be reviewed and you'll be notified of the approval decision in about 2 weeks.

Certificate Programs

Certificate programs are designed to provide students an edge over other students who have similar interests, but do not pursue a certificate program that compliments that interest. A graduate certification program represents an emphasis area within a particular field or it could be interdisciplinary and involve several fields. Two programs are of particular interest to structural engineering students and some of the courses required for those programs may be applied towards your engineering credit hour requirement.

Keep in mind that these programs are not offered through the Civil & Environmental Engineering department, so for information please contact the specific department listed for the program directly. The information provided here is to serve as a preliminary source of information, but specific program requirements can only be determined through the department offering the certificate.

A. Certificate in Historic Preservation:

Certificate in Historic Preservation is open to students in any graduate degree program at Texas A&M University. The cross-disciplinary program in historic preservation draws on strong discipline-based academic programs that prepare graduates to further their career goals. The certificate assumes that historic preservation is a cross-disciplinary field, and the program is designed to ensure that students gain a sense of mutual respect for others in the field, and appropriate awareness, understanding, and ability within a specific body of knowledge

Requirements

- Graduate students shall declare the intent to seek the Certificate by filing an application at the time they file a Degree Plan for their chosen degree.
- Certificate coursework must include ARCH 646: Historic Preservation Theory and Practice (3 credits),
- At least 12 additional credits of coursework with preservation content (equivalent to four courses). This requirement can sometimes be met through civil engineering coursework by choosing/defining a course project with preservation content.



- At least three (3) credits must be taken from courses outside of the student's major department. As the required course ARCH 646 is outside civil engineering, this requirement is automatically satisfied by taking the one required course.
- The degree program must include a professional study, professional paper, thesis or dissertation with a historic preservation focus.

For additional information, see: the web-site at:

<http://archone.tamu.edu/chc/education/links/certificate%20in%20hp.html>

B. Certificate in Business:

Mays Business School offers a Certificate in Business to non-business graduate students at Texas A&M University. This certificate provides a general overview of the four major functional areas of business through a set of courses designed for non-business students. To complete the Certificate in Business, students must successfully complete the following four courses (12 credit hours). These courses do not have business course prerequisites:

- Accounting 640
- Finance 635 (prerequisite: ACCT 640)
- Management 655
- Marketing 621

If you have completed the undergraduate versions of any or all of these courses (business minor courses), then you must use a substitute for the course(s). The recommended substitutions are:

COURSE	SUBSTITUTES
ACCT 640	ACCT 641, 642
FINC 635	FINC 629, 632, 642, 645
MGMT 655	MGMT 630
MKTG 621	MKTG 650, 656

Any two of the above courses may be used to satisfy elective coursework requirements at the masters level. Keep in mind that these courses fall under "Non-Technical Elective Coursework", and the master degrees allow a maximum of 6 semester hours of coursework in this category. So to complete the ME degree plus the Business Certificate, you would need to take a minimum of 36 hours.

For additional information, see: the web-site at: <http://mays.tamu.edu/degrees-and-majors/certificate-programs/certificate-in-business/>



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

All **structures graduate students** are automatically considered for the small number of TA positions based on their graduate application package (new students) and university standing (existing students). English Proficiency Certification is required by the State of Texas and Texas A&M before an international graduate student is eligible to serve as a Graduate Assistant Teaching or in any other position considered to be a teaching position (e.g. instructor, lecturer, etc.). International graduate students can certify for English proficiency before enrollment by achieving requisite scores on the speaking section of the following standardized tests: TOEFL, IELTS or PTE exams. [See chart below.] If international graduate students who wish to serve in teaching positions do not achieve requisite standardized test scores prior to enrollment, they can certify by taking the on-campus English Language Proficiency exam (ELPE).

Eligibility levels for international graduate students serving in teaching positions:

- Level 1: Students eligible for teaching assignments
- Level 2: Students conditionally eligible for teaching assignments for one semester only, but must simultaneously participate in Center for Teaching Excellence English Language Proficiency (CTE-ELP) instruction and achieve a certifying score on the ELPE by the end of the semester.
- Level 3: Students not eligible for teaching assignment. Students should participate in spoken language training (such as those provided by CTE-ELP) to assist them in meeting English language proficiency requirements.

Level #	Global Standardized Tests			Locally Administered (on Texas A&M campus) Exam
	TOEFL speaking section	IELTS speaking section	PTE speaking section	ELPE oral exam
1	26-30	>=8.0	>=85	80
2	23-25	7.0-7.5	75-84	75
3	<23	<7.0	<75	65



Fellowships

Fellowships are typically awarded to incoming students by the Civil & Environmental Engineering Graduate Office in consultation with the structures faculty graduate advisor (Dr. Bracci) and the Head of the Construction, Geotechnical and Structural Engineering Division (Dr. Hurlebaus). All new students are automatically considered for available fellowships and no separate application form is required.

Tuition Waivers & In-state Tuition

Tuition waivers do not exist at Texas A&M University. For Graduate Assistant Research and Teaching positions, your tuition may be paid by the Department or from the research project as a benefit of the position (note that student fees may or may not be paid by the Department or by the research project; if not, these fees are the responsibility of the student). Additionally, you may qualify for in-state tuition if you were awarded a Fellowship.

Other job opportunities

The department typically hires graduate students to help with grading in the undergraduate program (hourly employment for typically 10-15 hrs per week). When openings arise, an email will be sent to all structures graduate students with an attached application for interested students. If you are interested or need to pursue job opportunities beyond the TA/RA/grader 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 (VISA TYPE = IM) 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



Mailboxes

All graduate students will have a mailbox assigned to them on the 7th floor of the Dwight Look Engineering Building (DLEB). 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 and Research Assistants are made through the main Civil & Environmental Engineering Graduate Office. You are responsible for contacting Ms. Laura Byrd and/or Mr. Chris Grunkemeyer for a desk assignment.

Academic Probation

Graduate students must maintain a minimum of 3.0 out of 4.0 grade point ratio (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, the student will forward the plan to the main Civil & Environmental Engineering Graduate Office. If the student fails to raise their GPR, they will be removed from the structural engineering graduate program.



Frequently Asked Questions



Degree Plans

- ***What is the difference between the MS-NT and MS-T degrees?***

- MS-NT (Master of Science – Non-Thesis) - 30 hours of graduate coursework credits
- MS-T (Master of Science - Thesis) - 30 hours of graduate credits including 24 hours of graduate coursework credits and 6 hours of research credits with a thesis

Accordingly, the MS-T degree is more research-oriented and MS-NT is more coursework-oriented and geared towards professional practice.

- ***Can I change my master's degree status once I've been admitted?***

Yes, students will submit their degree plan within 1 month after the start of their second semester. On this plan, they can specify which MS degree they are pursuing.

- ***Can I change my master's degree status once a degree plan is filed?***

In general, 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. Please read below for additional information on changing degree status for specific degrees.

For petitions from the MS-Thesis to the MS-Non-Thesis degree, in addition to the degree change form, the following materials are required:

- A statement from the student describing why they feel they need to change degree programs
- A copy of their unofficial transcript, available via Howdy
- A listing of the support the student received during each semester they were enrolled. Include assistantships, fellowships, and scholarships. For each item, list the source of support and, if applicable, the supervisor.
- A statement from the MS-Thesis committee chair and/or Research Project Investigator in support of changing the degree program.



- ***I am completing my MS-NT or MS-T degree and wish to continue onto the PhD. What is the procedure?***

Continuing on for a Ph.D. after the Master's will be handled by the Civil & Environmental Engineering Graduate Office and the Graduate Admissions Committee in Structures. The committee will evaluate the application as they do the other applications to that degree program. Every student completing a graduate degree who wishes to continue to enroll in pursuit of another graduate degree should do so by filing an approved letter of intent with the Office of Graduate Studies (OGS). A student must use the letter of intent form that is available on the OGS website.

This form should also be submitted to the Civil & Environmental Engineering Graduate Office for review. Simultaneously, petitions for degree "upgrades" should additionally include the materials listed below and also be submitted to the Civil & Environmental Engineering Graduate Office. The Graduate Office will communicate the decision to the student.

- A statement of purpose for the desired degree program.
 - A current vitae/resume and unofficial transcript.
 - A letter of recommendation from your Master's Committee Chair, who should be a faculty member in structural engineering.
- ***I have taken a graduate level course in which I received 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 GPR 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 placed 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 select for inclusion only those courses in the degree plan for which he/she may receive grades of A or B!

- ***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.



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

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

- ***Who should be on my degree plan committee?***

MS-NT degree committee: a standard committee for all students

- Chair: Dr. Joe Bracci

MS-T and PhD degree committee: students must identify a professor within the area of structural 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. Note that for the MS at least one member must be a full-time structural engineering faculty member and that for the Ph.D. at least two members must be in the structural engineering faculty.

- ***When should I file the degree plan?***

MS-NT degree: students should file within one month after starting their second semester of graduate coursework.

MS-T students: students should file within one month after starting their second semester of graduate coursework.

PhD students: students should file before their third semester of graduate coursework.

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. Also, the office frequently is overwhelmed as specific deadlines approach. If you wait until the last minute to submit your form(s), you may not be able to get them all signed on time, or run the risk of additional delays in OGS resulting in your being blocked from registration.

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 Teaching Assistant (GAT) position?*

All new and existing students are automatically considered for a Graduate Teaching Assistantship.

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

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

4. *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 be a TA must fulfill an English proficiency requirement. The English Proficiency Certification (ELPE) is required before a graduate student is eligible 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. Contact the International Admissions Office at 979-845-1071 if you need to arrange a test.

Non-Civil Engineering Undergraduates

1. I do not have an undergraduate degree in civil engineering. Can I still be admitted into the structural engineering graduate program?

It is possible to be admitted to the graduate program in structural engineering without an undergraduate degree in CVEN. Generally, students who do not have an undergraduate degree in civil engineering are required to take numerous undergraduate prerequisite courses, but not necessarily all those required for the undergraduate degree.

However, admission into the program is highly competitive and is particularly focused at a student's technical abilities and potential chances to succeed in our graduate program. Your academic transcript must demonstrate your ability in math and science courses in order to be a competitive applicant.

2. Will I be able to become licensed as a professional engineer without an undergraduate degree in civil engineering if I complete the graduate structural engineering program?

You can be licensed in the state of Texas with only a graduate degree in civil engineering (CVEN) if the degree is obtained from a university that has a 4-year ABET accredited undergraduate program, which is the case for the civil & environmental engineering program at Texas A&M University. However, rules often change, so please the website of the Texas Board of Professional Engineers (<http://engineers.texas.gov/>) for the latest registration requirements. We cannot be responsible for licensure changes.

Probation

1. What are the criteria for scholastic 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 and degree plan 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 or in the degree plan) falls below 3.0, the student is placed on probation by the department. Notifications are made by email or 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 not satisfied after one 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?

It is the student's responsibility to complete the pending work within one semester of the course end. The student must complete the course work for which an 'I' was received by submitting it to the professor pending his/her approval. 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 CVEN 691 (research), CVEN 684 (professional internship), or CVEN 692 (Professional study) become an F after one semester?

No, these courses are excluded from that rule.

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

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

