Instructor:
Professor Hector Estrada, P.E., Ph.D., hestrada@pacific.edu, Office: CTC 223, Phone: 946-3076
Office hours:
MTWR 1:00 to 2:00 pm, or by appointment.

Catalog description and prerequisites:
Determination of loads on structures due to earthquakes. Overview of seismology. Methods of estimating equivalent static lateral forces; response spectrum and time history analysis. Concepts of mass, damping and stiffness for typical structures. Design for inelastic behavior. Numerical solutions and code requirements. Prerequisites: MS in Engineering Science major or permission of the faculty member involved.

Required Textbooks:

Other course materials:
Additional resources are available at [http://www1.pacific.edu/~hestrada/](http://www1.pacific.edu/~hestrada/) or Canvas course page

Course Objectives:
By the end of the semester, the students in this course will be able to:
1) demonstrate an understanding of the fundamentals of earthquake engineering
2) demonstrate an understanding of how building codes interpret and incorporate fundamentals of earthquake engineering
3) identify and solve basic structural dynamics problems
4) evaluate structural systems using equivalent static and dynamic seismic analyses

Methods of evaluation and grading procedures:
1. There will be **one** exam during the term and a **comprehensive final** exam, each worth 30% of the total grade. The times and dates of exams will be announced at least one week in advance. The exams may be closed notes and closed book, **except as noted in the exam booklet**.
2. The remaining 40% of the total grade will be based on **homework** (25%), and a **class project** (15%). Homework assignments will be given regularly. The assignments and due dates will be posted on the course webpage. You are expected to do the assignments and project yourself. There are two goals in doing the homework problems, (a) to learn the concept or method used in solving the given problem, (b) to communicate your approach and results of the problem to someone (the instructor, in this case).

Your grade average will be converted to a letter grade as follows:

- **A = 90% and above**, **B+ = 83 – 86.9%**, **C+ = 73 – 76.9%**, **D+ = 63 – 66.9%**
- **A– = 87 – 89.9%**, **B = 80 – 82.9%**, **C = 70 – 72.9%**, **D = 60 – 62.9%**
- **B– = 77 – 79.9%**, **C– = 67 – 69.9%**, **F ≤ 60%**.

Policies for attendance, make-up exams, and late assignments:
Attendance is required; each unexcused absence will result in a deduction of 1% from your final grade average. Exam make-ups will be granted only for authorized absences. **Late homework will not be graded.**

Collection of work for assessment:
Student work may be retained to assess how course learning objectives are being met and for accreditation purposes.
Honor Code:
The Honor Code at the University of the Pacific calls upon each student to exhibit a high degree of maturity, responsibility, and personal integrity. Students are expected to:
• act honestly in all matters
• actively encourage academic integrity
• discourage any form of cheating or dishonesty by others
• inform the instructor and appropriate university administrator if she or he has a reasonable and good faith belief and substantial evidence that a violation of the Academic Honesty Policy has occurred.
Violations will be referred to and investigated by the Office of Student Conduct and Community Standards. If a student is found responsible, it will be documented as part of her or his permanent academic record. A student may receive a range of penalties, including failure of an assignment, failure of the course, suspension, or dismissal from the University. The Academic Honesty Policy is located in Tiger Lore and online at http://www.pacific.edu/Campus-Life/Safety-and-Conduct/Student-Conduct/Tiger-Lore-Student-Handbook-.html

Accommodations for students with disabilities:
If you are a student with a disability who requires accommodations, please contact the director of the Office of Services for Students with Disabilities (SSD) for information on how to obtain an Accommodations Request Letter.
Three-step accommodation process:
1. Student meets with the SSD Director and provides documentation and completes registration forms.
2. Student requests accommodation(s) each semester by completing the Request for Accommodations Form.
3. Student arranges to meet with his/her professors to discuss the accommodation(s) and to sign the Accommodation Request Letter.

To ensure timeliness of services, it is preferable that you obtain the accommodation letter(s) from the Office of SSD within 1-2 weeks. After the instructor receives the accommodation letter, please schedule a meeting with the instructor during office hours or some other mutually convenient time to arrange the accommodation(s). The Office of SSD is located in the McCaffrey Center, Rm. 137. Phone: 209-946-3221. Email: ssd@pacific.edu. Online: www.pacific.edu/disabilities.

Student responsibilities:
In order to be successful in this course you must:
1. meet all prerequisites for the course.
2. attend every class and participate in the classroom discussions.
3. obtain the required study materials and read assigned materials.
4. complete all assigned work (laboratory work, exams, and assignments) on time.
5. work two hours on assignments and studying outside of class for every hour of class contact time.
6. adhere to the honor code.

Instructor responsibilities:
You should expect me to:
1. be prepared for lecture, including being organized and punctual.
2. be available for questions and concerns, particularly during office hours.
3. provide correct answers to all questions, even if I may not initially know.
4. treat all students equally and respectfully.
5. grade fair and consistent.
6. be actively engage in student learning.
Learning objectives for CIVL 263/193 align with the SOECS student outcomes as follows:

<table>
<thead>
<tr>
<th>SOECS Student Outcomes</th>
<th>Course Learning Objective No.(s)</th>
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<tbody>
<tr>
<td>a Apply knowledge of math, science, and engineering</td>
<td>3, 4</td>
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<tr>
<td>b Design and conduct experiments, analyze and interpret data</td>
<td></td>
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<tr>
<td>c Design the fundamental components of a system or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, constructability, and sustainability.</td>
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<tr>
<td>d Function on multi-disciplinary teams</td>
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<tr>
<td>e Identify, formulate, and solve engineering problems</td>
<td>3, 4</td>
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<tr>
<td>f Understand the importance of professional and ethical responsibility of engineers.</td>
<td>1, 2, 4</td>
</tr>
<tr>
<td>g Effectively communicate using written, oral, and graphical means.</td>
<td>All assignments</td>
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<tr>
<td>h Understand the impact of engineering solutions in a global, economic, environmental, and societal context.</td>
<td>4</td>
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<tr>
<td>i Recognize the need for, and engage in, life-long learning.</td>
<td>4</td>
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<tr>
<td>j Have knowledge of contemporary issues in the engineering industry.</td>
<td>4</td>
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<tr>
<td>k Use the techniques, skills, and modern engineering tools necessary in engineering practice.</td>
<td>3, 4</td>
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Map of University Core Competencies to the SOECS Student Outcomes (Criterion 3 a-k) 2017-2018.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>a</td>
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<tr>
<td>Quantitative Reasoning</td>
<td>x</td>
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<td>Critical Thinking</td>
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<td>Oral Communication</td>
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<td>Written Communication</td>
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<tr>
<td>Information Literacy</td>
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