Course Name: Design of Wood Structures  
Course Number: WSE 458  
Term Offered: Fall 2015  
Credits: 3  
Instructor name: Rakesh Gupta  
Instructor email: rakesh.gupta@oregonstate.edu  
Instructor phone: 541 737 4223 (I do not answer my phone because I have a speech disability. The best way to contact me is via email)  
Link to instructor bio or website: http://woodscience.oregonstate.edu/people/faculty/gupta-rakesh  
Teaching Assistant name and contact info: NA

Course Description
Study of basic wood properties and design considerations. Design of wood connectors, beams, columns, and beam columns. Introduction to plywood and glue laminated members. Design of structural diaphragms and shear walls. Taught via Ecampus only. PREREQS: CE 381 or equivalent, or instructor’s permission.

Communication
Please post all course-related questions in the General Discussion Forum so that the whole class may benefit from our conversation. Please email your instructor for matters of a personal nature. I will reply to course-related questions and email within 24-48 hours. I will strive to return your assignments and grades for course activities to you within five days of the due date.

Course Credits - 3
This course combines approximately 90 hours of instruction, online activities, and assignments for 3 credits.

Technical Assistance
If you experience computer difficulties, need help downloading a browser or plug-in, assistance logging into the course, or if you experience any errors or problems while in your online course, contact the OSU Help Desk for assistance. You can call (541) 737-3474, email osuhelpdesk@oregonstate.edu or visit the OSU Computer Helpdesk online.
Learning Resources
Required Textbook:

Required Code:

Note to prospective students: Please check with the OSU Bookstore for up-to-date information for the term you enroll (OSU Bookstore Website or 800-595-0357). If you purchase course materials from other sources, be very careful to obtain the correct ISBN.

Canvas
This course will be delivered via Canvas where you will interact with your classmates and with your instructor. Within the course Canvas site, you will access the learning materials, such as the syllabus, class discussions, assignments, projects, and quizzes. To preview how an online course works, visit the Ecampus Course Demo. For technical assistance, please visit Ecampus Technical Help.

Measurable Student Learning Outcomes

Learning outcomes:
1) Understand wood as a structural material and be able to determine allowable stress for common types of wood (for common loading conditions) using NDS.
2) Understand the behavior of members in flexure and be able to design beams using NDS.
3) Be able to design columns and beam-columns using NDS.
4) Be able to design diaphragms and shear walls.
5) Understand connection behavior and be able to design basic wood connections.

These will be measured by the Homeworks, discussion, and two exams.

Evaluation of Student Performance

- Discussions – 100 points
- Homework – 1000 points
- Midterm Exam – 200 points
• Final Exam – 300 points
• Total – 1600 points
• Bonus points – 100 (Reflections)

Grading Scale
An A in this course is earned if a student earns 90%-100% points; 80%-89.9% would be B; 70% - 79.9% ---- C; 60% – 69.9% ---- D, below 60% would be F grade…!

Course Content
Tentative Class Schedule: This is a tentative schedule for class subject and reading assignments. The schedule is subject to change.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Reading</th>
<th>Learning Activities</th>
<th>Due Dates</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>Course overview, Introduction to the design of wood structures, and design loads</td>
<td>Chapter 1</td>
<td>-List environmental benefits of using wood as a structural material</td>
<td>Discussion by the end of the week (Friday)</td>
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<td>Chapter 2 &amp; 3</td>
<td>-List advantages and disadvantages of using wood as a structural material</td>
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<td>-List different types of wood constructions</td>
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<td>-List different types of design loads</td>
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<td>-Find, identify, and label a woodframe building</td>
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<td>Week 2</td>
<td>Chapters 4 &amp; 5</td>
<td>-Learn the basic anatomy of wood.</td>
<td>HW#2 and other activities by the end of the week (Friday)</td>
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<td>wood properties/grades, glulam</td>
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<td>-Learn the wood water relationship</td>
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<td>-Learn about dimensional stability of wood.</td>
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<td>-Learn the Growth Characteristics of wood.</td>
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<td>-Learn the lumber sizes and grading.</td>
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<td>-To pick design values from NDS.</td>
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<td>-Learn about the allowable stress design of wood structures.</td>
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<td>-Learn about the durability of wood.</td>
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<td>Week 3</td>
<td>Beam Design</td>
<td>Chapter 6</td>
<td>Design a simple wood beam based on the ASD procedure of the NDS.</td>
<td>HW#3 and other activities by the end of the week (Friday)</td>
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<td>Week 4</td>
<td>Design for Axial Forces</td>
<td>Chapter 7</td>
<td>Design a simple wood column based on the ASD procedure of the NDS.</td>
<td>HW#4 and other activities by the end of the week (Friday)</td>
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<td>Week 5</td>
<td>Design for combined loading</td>
<td>Chapter 7</td>
<td>Design a wood member for the combined loads using NDS.</td>
<td>HW#5 and other activities by the end of the week (Friday)</td>
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</table>
| Week 6 | Wood Structural Panels | Chapter 8 | -Install a WSP with proper clearance between the panels.  
-Will be able to design roof sheathing made up of WSP.  
-Will be able to design floor sheathing made up of WSP. | HW#6 and other activities by the end of the week (Friday) |
| Week 7 | Horizontal Diaphragms | Chapter 9 | Design a simple wood diaphragms as a part of the LFRS using NDS. | HW#7 and other activities by the end of the week (Friday) |
| Week 8 | Shearwalls | Chapter 10 | Design a simple wood shearwall as a part of the LFRS using NDS. | HW#8 and other activities by the end of the week (Friday) |
| Week 9 | Connections | Chapter 11 | Design a basic nailed and bolted wood connections | HW#9 and other activities by the end of the week (Friday) |
| Week 10 | Connections | Chapter 12 & 13 | Design a basic nailed and bolted wood connections | HW#9 and other activities by the end of the week (Friday) |

**Note:** Students are responsible for all the assigned reading and should do all of the assigned reading. The lectures will not cover all of the material needed to do the homework or exams. The lectures will highlight basic concepts. Additional details/information may be needed to perform the required calculations in the course, just as in actual design practice.

**Course Policies**

This course is offered through Oregon State University Extended Campus. For more information, contact:  
Web: ecampus.oregonstate.edu  
Email: ecampus@oregonstate.edu  
Tel: 800-667-1465
Discussion Participation
Students are expected to participate in all graded discussions. While there is great flexibility in online courses, this is not a self-paced course. You will need to participate in our discussions on at least two different days each week, with your first post due no later than Thursday evening, and your second posts due by the end of each week (Friday).

Incompletes
Incomplete (I) grades will be granted only in emergency cases (usually only for a death in the family, major illness or injury, or birth of your child), and if the student has turned in 80% of the points possible (in other words, usually everything but the final exam). If you are having any difficulty that might prevent you completing the coursework, please don’t wait until the end of the term; let me know right away.

Guidelines for a Productive and Effective Online Classroom
Students are expected to conduct themselves in the course (e.g., on discussion boards, email) in compliance with the university’s regulations regarding civility.

Civility is an essential ingredient for academic discourse. All communications for this course should be conducted constructively, civilly, and respectfully. Differences in beliefs, opinions, and approaches are to be expected. In all you say and do for this course, be professional. Please bring any communications you believe to be in violation of this class policy to the attention of your instructor.

Active interaction with peers and your instructor is essential to success in this online course, paying particular attention to the following:

- Unless indicated otherwise, please complete the readings and view other instructional materials for each week before participating in the discussion board.
- Read your posts carefully before submitting them.
- Be respectful of others and their opinions, valuing diversity in backgrounds, abilities, and experiences.
- Challenging the ideas held by others is an integral aspect of critical thinking and the academic process. Please word your responses carefully, and recognize that others are expected to challenge your ideas. A positive atmosphere of healthy debate is encouraged.

Statement Regarding Students with Disabilities
Accommodations are collaborative efforts between students, faculty, and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 541-737-4098.
Accessibility of Course Materials
All materials used in this course are accessible. If you require accommodations please contact Disability Access Services (DAS).

Additionally, Canvas, the learning management system through which this course is offered, provides a vendor statement certifying how the platform is accessible to students with disabilities.

Expectations for Student Conduct
Student conduct is governed by the university’s policies, as explained in the Student Conduct Code.

Academic Integrity
Students are expected to comply with all regulations pertaining to academic honesty. For further information, visit Student Conduct and Community Standards, or contact the office of Student Conduct and Mediation at 541-737-3656.

OAR 576-015-0020 (2) Academic or Scholarly Dishonesty:
a) Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another.

b) It includes:
   i) CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using prohibited materials and texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.
   ii) FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.
   iii) ASSISTING - helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone's grades or academic records, taking a test/doing an assignment for someone else by any means, including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114).
   iv) TAMPERING - altering or interfering with evaluation instruments or documents.
   v) PLAGIARISM - representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including
unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own. c) Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University's Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.

**Conduct in this Online Classroom**

Students are expected to conduct themselves in the course (e.g., on discussion boards, email postings) in compliance with the [university's regulations regarding civility](#).

**Tutoring**

[NetTutor](#) is a leading provider of online tutoring and learner support services fully staffed by experienced, trained and monitored tutors. Students connect to live tutors from any computer that has Internet access. NetTutor provides a virtual whiteboard that allows tutors and students to work on problems in a real time environment. They also have an online writing lab where tutors critique and return essays within 24 to 48 hours. Access NetTutor from within your Canvas class by clicking on the NetTutor button in your course menu.

**OSU Student Evaluation of Teaching**

Course evaluation results are extremely important and are used to help me improve this course and the learning experience of future students. Results from the 19 multiple choice questions are tabulated anonymously and go directly to instructors and department heads. Student comments on the open-ended questions are compiled and confidentially forwarded to each instructor, per OSU procedures. The online Student Evaluation of Teaching form will be available toward the end of each term, and you will be sent instructions via ONID by the Office of Academic Programs, Assessment, and Accreditation. You will log in to “Student Online Services” to respond to the online questionnaire. The results on the form are anonymous and are not tabulated until after grades are posted.