



Architectural and Engineering Design Department (AEDD) South Portland, Maine 04106

Title: Applied Engineering Buildings
Credit Hours: 3
Instructor: Paul Richardson
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Catalog Number: AEDD-255
Total Contact Hours: 60 Lecture: 30 Lab: 30
Phone: 7415565

Course Syllabus

Course Description

This course is a non-calculus introduction to the combined study of mechanics and strength of materials as it relates to building construction using Allowable Stress Design methods. Up to date values in wood, laminates/composites, steel and engineering applications are covered. It is intended for architects, builders, carpenters, designers, and code enforcement officers requiring only a background in algebra. This is a comprehensive basic engineering course with a focus on proper material selection.

Prerequisite: Algebra or instructor approval, diligence.

Course Objectives

As a result of this course the student will:

1. Develop compression, tension, bending, and shear problems.
2. Analyze force problems and develop structural solutions.
3. Perform calculations for structural analysis on concrete, wood, and steel.
4. Make effective use of code and manufacturer load tables.

Topical Outline

1. Overview of design principals as they relate to structural mechanics.
2. Development preliminary static problems in loading, shear, and moment diagrams.
3. Introduction and use of strength values for concrete, wood and wood products, and steel
4. Applications of structural analysis.

Course Requirements

1. Active attendance and participation.
2. Completion of homework.
3. Comprehensive written exams in the following areas;
 - a. Study of mechanics as it relates to static's.
 - b. Strength of materials for wood and wood products.
 - c. Strength of materials for mild and hard steel as it relates to building construction.

Student Evaluation and Grading

Final grade is based upon the following:

Homework 20% (Book Assignments & Excel Assignments)

Mechanics exam 20%

Wood exam 20%

Steel exam 20%

Final project 20%

Text, Tools, and Supplies

Simplified Engineering for Architects and Builders by James Ambrose (Optional), pencils, erasers, loose leaf note book, an eight digit scientific calculator and an Architectural scale.

Department Policies

1. Grading – grading policies may vary by instructor

A	4.00	9.3-10
A-	3.67	9-9.2
B+	3.33	8.7-8.9
B	3.00	8.3-8.6
B-	2.67	8-8.2
C+	2.33	7.7-7.9
C	2.00	7.3-7.6
C-	1.67	7.0-7.2
D+	1.33	6.7-6.9
D	1.00	6.3-6.6
F	0.00	>6.3 FAILURE
P	NONE	Equivalent to a "C" (2.0) or better
AF	0.00	Administrative Failure
I	None	Incomplete*
W	None	Official Withdrawal from course
NS	None	Failure to appear for any session of

class

*Incomplete grades are given at the discretion of the Instructor. Incomplete grades may only be given after an incomplete contract between the instructor and student has been signed and submitted to Enrollment Services.

2. Work submitted that does not meet standards will be given and "N/A Resubmit". Instructions on how to correct your work will be provided through "Redlines" (comments by instructor). All "Redlines" must be addressed before resubmitting the assignment. NO PARTIAL credit will be given unless all Redlines have been corrected.
3. Late work will drop a letter grade per week late. Assignments turned in more than 4 weeks late will receive a 6/10 which is a failing grade.
4. Any student who submits work done by someone else will at the least, receive a failing grade for that assignment and must redo the assignment. Should the instructor see fit,

the student involved will be reported to the Dean of Students in violation of the Student Code of Conduct which will result in the student receiving a failing grade for the class.

5. Any activity, conversation or behavior that is not considered appropriate for the classroom or professional environment will result in the request that the behavior cease. If it does not, the student(s) involved will be dismissed from class and referred to the dean of Students and may not return to class until they have met with the Dean of Students, Department Chair and Instructor.
6. Use of cell phones, and other electronic devices during class which are not for class purposes is prohibited. Cell phones **do not** need to be turned off, but should be set to **vibrate** or **silenced** during class. Class time is for class activities only.
7. Personally owned computers are not required to be successful in this program, however they are highly recommended. All students have access to free Autodesk software downloads available at <http://students.autodesk.com/>. If you do not have access to your own computer to complete your homework, computer labs are available during open building hours 8:00 AM – 9:30 PM M-F. At least 3-6 hours of homework time outside each 3 credit course is normal and to be expected.
8. Hours for faculty members are posted on the faculty member's door. You can make appointments with faculty via e-mail.
9. Only SMCC E-mail addresses will be used by faculty to communicate to students. E-mails between student and faculty must meet the following criteria: must have a subject line which refers to the class code; must be signed with student's full name. See the full e-mail etiquette policy in R:\General\Department Policies.
10. Attendance policy – attendance is taken at the beginning of each class. If the student is late for a class it is the responsibility of the student to review their attendance and make sure that they have been marked Tardy rather than Unexcused Absence. Excused absences can be granted if prior communication is made with the instructor. The decision to excuse an absence is determined by the individual instructor. Students may withdraw from a class up to the twelfth week into the semester to avoid a failing grade. Make note of the class withdrawal deadline date and time in the student handbook and academic calendar on the portal.
 - a. **For classes that meet once a week** – no more than 3 unexcused absences are allowed **total**, no more than 2 classes may be missed **in a row**. A student who misses a class will receive a warning e-mail; if two weeks in a row are missed without communication the student will receive an Administrative Fail (AF) for the class. A student who has a total of 3 classes will receive an AF.
 - b. **For classes that meet twice a week** – no more than a total of 5 unexcused absences are allowed; no more than 3 classes may be missed **in a row**. If a student fails to attend two classes in a row he/she will receive a warning e-mail. If no correspondence has been made and the student fails to show for the third class in a row, the student will receive an AF for the class. Students that have missed a total of 5 classes will receive an AF.

11. All students are expected to take notes and maintain them for reference purposes throughout the class and future classes. Students must also be responsible for their own backup of course work. If work is lost it is NOT the AEDD responsibility to replace or find it.
12. All work must follow the Technical Graphics Standards Manual for the AEDD. A copy of the manual has been placed in R:\General

End-of-Course Evaluation

In order to gain access to final course grades, students must complete evaluations for each course attended at SMCC. Evaluations are submitted online and can be accessed through the student portal site. Students can access the course evaluation report beginning two weeks before the end of classes. The deadline for submission of evaluations occurs 24 hours after the last day of classes each semester. Instructors will announce when the online course evaluation is available.

ADA Syllabus Statement

Southern Maine Community College is an equal opportunity/affirmative action institution and employer. For more information, please call 207-741-5798.

If you have a disabling condition and wish to request accommodations in order to have reasonable access to the programs and services offered by SMCC, you must register with the disability services coordinator, **Sandra Lynham, who can be reached at 741-5923**. There will be some documentation for your teachers that must be supplied before accommodations can be given. Further information about services for students with disabilities and the accommodation process is available upon request at this number.

SMCC Pay-for-Print Policy

Students can print 150 pages per semester free of charge. If you print over 150 pages, you will be charged 10 cents per page to your student billing account for tuition and fees.

Leftover pages from each semester will not be rolled over to the following semester.

The College's pay-for-print system monitors printing on all public printers (i.e. those in general access labs, library printers, Academic Achievement Center, Noisy Lounge and technology labs). Each time you log-in to the system, the print station displays the remaining print quota. Once the printing quota has been exceeded, users will be charged \$ 0.10 per page or \$.05 per side if the printer prints on both sides on their student accounts on a monthly basis. Color printouts will be charged at 11 page units. This means each color printout will count as 11 pages toward the quota and will cost \$1.10.

Add-Drop Policy

Students who drop a course during the one-week “add/drop” period in the fall and spring semesters and the first three days of summer sessions receive a 100% refund of the tuition and associated fees for that course. Please note any course that meets for less than the traditional semester length, i.e., 15 weeks, has a pro-rated add/drop period. There is no refund for non-attendance.

Withdrawal Policy

A student may withdraw from a course only during the semester in which s/he is registered for that course. The withdrawal period is the second through twelfth week of the fall and spring semesters and the second through ninth week of twelve-week summer courses. This period is pro-rated for shorter-length courses. To withdraw from a course, a student must complete and submit the appropriate course withdrawal form, available at the Enrollment Service Center (no phone calls, please). The designation “W” will appear on the transcript after a student has officially withdrawn. A course withdrawal is an uncompleted course and may adversely affect financial aid eligibility. Failure to attend or ceasing to attend class does not constitute withdrawal from the course. There is no refund associated with a withdrawal.

Plagiarism Statement

Adherence to ethical academic standards is obligatory. Cheating is a serious offense, whether it consists of taking credit for work done by another person or doing work for which another person will receive credit. Taking and using the ideas or writings of another person without clearly and fully crediting the source is plagiarism and violates the academic code as well as the Student Code of Conduct. If it is suspected that a student in any course in which s/he is enrolled has knowingly committed such a violation, the faculty member should refer the matter to the College’s Disciplinary Officer and appropriate action will be taken under the Student Code of Conduct. Sanctions may include suspension from the course and a failing grade in the course. Students have the right to appeal these actions to the Disciplinary Committee under the terms outlined in the Student Code of Conduct.