The University of Southern Mississippi
College of Science and Technology - School of Construction
AEC 270 – Statics & Strengths
H001-ONLINE HBG

COURSE SYLLABUS

Instructor
• Dr. Tulio Sulbaran
• Office Address: TEC 250A, Bobby Chain Technology Building, Hattiesburg
• Office Number: 601-266-6419
• Fax Number: 601-266-5717 (Main SOC Office)
• Email: Tulio.Sulbaran@usm.edu

Office Hours
• Office Hours*: T, TH & F 9:15-11:45am CST, F 2:00-5:00pm CST
• Or by Appointment
  *Subject to Change

Drop Date
• January 19-Last day to drop full semester classes and receive 100% financial refund
• April 5-Last day to withdraw full-semester classes and receive a grade of W

Please see Academic Calendar: https://www.usm.edu/registrar/spring-2017-full-term-academic-calendar

Prerequisites
• MAT 101 – Algebra and MAT 103 - Trigonometry

Credit Hours
• Two (3) credit hours

Course Description-Current USM Bulletin:
AEC 270: Study of 2 dimensional forces, force equilibrium, stresses, strains, beams, and columns.

Course Overview
Statics & Strength of Materials is the prerequisite course for Structural Design and involves the study of force systems, stresses, strains, beams and columns. This preparation is necessary for understanding structural design and analysis.

Course Outcome(s)

Student Learning Outcomes
At the completion of this course the students will be able to:
1. Calculate the components of a force (ACCE SLO 19)
2. Calculate the moments of forces (ACCE SLO 19)
3. Apply the joints and sections method to solve problems (ACCE SLO 19)
4. Trace load paths on structures (ACCE SLO 19)
5. Calculate axial, shear and bearing stresses (ACCE SLO 19)
6. Calculate axial strain using Hooke’s law (ACCE SLO 19)
7. Calculate thermal stresses (ACCE SLO 19)
8. Calculate centroids and moments of inertia (ACCE SLO 19)
9. Construct load, shear, and moment diagrams (ACCE SLO 19)
10. Calculate flexural shear and beam deflections (ACCE SLO 19)
11. Analyze and design columns (ACCE SLO 19)

Course Communication
- **Course Material:** will be delivered through the Blackboard 9.1 Shell.
- **Email:** will be received and sent through the Blackboard 9.1 Shell. Students must include in the subject header ‘AEC 270 Course’ prior to the stated subject topic.
- **Assessments:** All quizzes, exams, assignment, projects etc should be submitted by the student within the Blackboard course shell.
- **Help sessions:** will be conducted with either the Blackboard IM, Collaborate Classroom or WebEx.
- **Access:** Students are responsible for checking the information in Blackboard few times each week
- **Communication Etiquette:** Students must always use proper communication etiquette. If appropriate collegiate-level language is not used, the faculty will implement the proper academic penalties or remediation. Group/peer to peer communication tools provided in Blackboard are only to facilitate the completion of the assessment. If the group/peer to peer communication tool are used for anything not related to the completion of the assessment, the faculty will implement the proper academic penalties or remediation.

Required Text (s) and Readings

Technology Requirements
- **Computer with Windows 7:**
  - **Report Creation in Microsoft Word 2007 or later:** The main requirement is that report exercises will be required to be submitted with .doc or .docx file extensions. You do not necessarily have to purchase a version of Microsoft Word for this course: OpenOffice.org is a free office suite which has a word processor, 'Writer', which saves files in the .doc format. The suite is available for download at www.openoffice.org. Keep in mind that I will not 'train' you to use any word processor in this course--that is your responsibility, in context of the requirements I specify.

- **Blackboard Shell Access:** It is your responsibility to enable your computer and web browser for access to and usability with Blackboard 9.1. Please take the time to learn how and what browsers and Java versions are required. I have several browsers and Java version installed on my personal computer for these reasons. For example, the following browsers are most compliant in my experience (in order of success):
  - Windows Internet Explorer 9
  - Opera http://www.opera.com/
  - Safari 5 http://www.apple.com/safari/
• Submission of assignments and taking assessments: You are also responsible for ensuring that your assessments and assignments properly submit within the course shell. I will take a very limited number of submissions via email. For this reason, and the fact that technology might be an issue. You must plan to submit all your assessment few days before the deadline to have time to address any technology issue BEFORE the deadline.

Class Procedures and Requirements
• Reading Material Quizzes: At the end of each unit (on Wednesday approximately every two weeks unless otherwise instructed), there will be quizzes on the readings material assigned.
• Assignments: There might be homework during the semester to complement the quizzes.
• Mid Term Exam and Second Exam: Must be proctored
• Final Exam: There will not final exam for this course.

*All quizzes and Assignments will be due by 11:00pm CST on Wednesday unless otherwise instructed).
*All quizzes and Assignments will be taken/submitted within the course shell (no external email).

Class Participation Policy
• Students are expected to stay current with the readings assignments and to complete assessments by the required due dates.
• This course is a self-study course in the sense that I want to force original thought and questioning, therefore collaboration between students is not allowed. The instructor will take assignment questions through the Discussion Board and other questions through e-mail also through Blackboard

Evaluation Criteria
Course:
1. Mid Term Exam 30% - Due Wed Feb 15th, 2017
(MUST BE PROCTORED)
2. Quizzes/Assignments 40% - Due throughout the semester
3. Second Exam 30% - Due Mon April 24th, 2017
(MUST BE PROCTORED)

Grading Scale
A 90 to 100 – Excellent Work: Goes Beyond the requirements of the subject
Criteria: Advanced understanding of the subject, thoughtful analysis of the problem, clear communication of ideas, depth of understanding in connecting theory to practice, provocative, scholarly treatment of the subject, and creative/imaginative connections or examples
B 80 to 89 – Good Work: Fully achieves the requirements of the subject
Criteria: Knowledge and depth of understanding of the subject, clear communication of ideas, examines the implications of theory to practice, analysis of the problem, and implementation of solutions.
C 70 to 79 – Average Work: Substantially completes the requirements of the subject
Criteria: Knowledge of the subject, adequately communicates ideas but lacks insight, implications drawn are limited in scope and not connected, not attempt to go beyond the minimum requirements of the subject
D 60 to 69 – Inferior Work: Inadequate attempt in completing the requirements
Criteria: Limited knowledge of the subject, inadequate communication of ideas, completes less than minimum requirements of the subject.

F 0 to 59 – Failure: Noncompliance with basic requirements of the class
Criteria: Blatant disregard for most requirements.

Proctored Mid Term Exam and Second Exam
• The Mid Term Exam and Second Exam must be proctored. The students enrolled in the course have the responsibilities to ensure that this process is successful. Students must read all instructions about their responsibilities related to fees, forms, and follow-up located at the following web-page:
  https://lec.usm.edu/proctoring/
• The Mid Term Exam and Second Exam are password protected and only the student verified proctor will be issued the password. The timeframes to take the Mid Term Exam and Second Exam are provided in the Blackboard Course Shell.
• No proctoring is required for Quizzes. Quizzes are not password protected.

Late Assignments or Projects
• Late work will not be accepted. Plan to submit all assessments few days before the deadline to be able to address any technology issues (that you might encounter) BEFORE deadline. Exceptions must be documented and at the discretion of the instructor.

Academic Integrity

All students at the University of Southern Mississippi are expected to demonstrate the highest levels of academic integrity in all that they do. Forms of academic dishonesty include (but are not limited to):
1. Cheating (including copying from others’ work)
2. Plagiarism (representing another person’s words or ideas as your own; failure to properly cite the source of your information, argument, or concepts)
3. Falsification of documents
4. Disclosure of test or other assignment content to another student
5. Submission of the same paper or other assignment to more than one class without the explicit approval of all faculty members’ involved
6. Unauthorized academic collaboration with others
7. Conspiracy to engage in academic misconduct

Engaging in any of these behaviors or supporting others who do so will result in academic penalties and/or other sanctions. If a faculty member determines that a student has violated our Academic Integrity Policy, sanctions ranging from resubmission of work to course failure may occur, including the possibility of receiving a grade of “XF” for the course, which will be on the student’s transcript with the notation “Failure due to academic misconduct.” For more details, please see the University’s Academic Integrity Policy. Note that repeated acts of academic misconduct will lead to expulsion from the University.

Academic Honesty
The following is from the USM Undergraduate Bulletin:

“When cheating is discovered, the faculty member may give the student an F on the work involved or in the course. If further disciplinary action is deemed appropriate, the student should be reported to
the Dean of Students. In addition to being a violation of academic honesty, cheating violates the Code of Student Conduct and may be grounds for probation, suspension, and/or expulsion. Students on disciplinary suspension may not enroll in any courses offered by The University of Southern Mississippi.”

**Academic Honesty**

**Required:** Students must send to the professor BEFORE the Quiz 1 due date an e-mail using the Blackboard course shell messages/e-mail stating that they:

- Understand USM’s academic integrity policy and also understand that if they do not uphold the standards of academic honesty, the instructor will enforce all applicable punishment.
- Understand their responsibility under the 'Technology Requirements' section.
- Understand that work in this course is not to be collaborative, and that sharing electronic documents or course information between students (that are not in the same group) is prohibited and considered cheating.
- Understand their Communication Etiquette responsibility.
- Understand their Mid Term and Second Exam Proctor requirements.

If a student fails to send the statements above by the due date, the faculty will implement the proper academic penalties or remediation at his own discretion considering all other activities of the student.

Your cooperation is required in this course for learning or 'academic' integrity. You may have to do some supplemental research to feel confident of your answers (examples would be jobsite visits, websites with construction data, supplemental materials posted by the instructor, etc.). In any case it is always good to document your assumptions in the assignments. This will result in very unique submissions and if I feel that several of the assignments have been shared or collaborated upon, I will act and then investigate. **If two or more assignments are duplicated, I will fail all parties involved, so please DO NOT SHARE YOUR WORK with others prior to the submission.**

**ADA Policy:** If a student has a disability that qualifies under the Americans with Disabilities Act (ADA) and requires accommodations, he/she should contact the Office for Disability Accommodations (ODA) for information on appropriate policies and procedures. Disabilities covered by ADA may include learning, psychiatric, physical disabilities, or chronic health disorders. Students can contact ODA if they are not certain whether a medical condition/disability qualifies.

**Address:**
The University of Southern Mississippi
Office for Disability Accommodations
118 College Drive # 8586
Hattiesburg, MS 39406-0001

**Voice Telephone:** 601.266.5024 or 228.214.3232

**Fax:** 601.266.6035

Individuals with hearing impairments can contact ODA using the Mississippi Relay Service at 1.800.582.2233 (TTY) or emailing ODA at oda@usm.edu.
# Class Schedule*

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Unit</th>
<th>Topic</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 16th – Jan 20th, 2017</td>
<td>1</td>
<td>Ch.1 – Introduction (14 pg)</td>
<td>Jan 18th Martin Luther King</td>
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<tr>
<td>2</td>
<td>Jan 23rd – Jan 27th, 2017</td>
<td>1</td>
<td>Ch.2 – Statics (Sec 2.1, 2.2, 2.3) (46 pg)</td>
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<tr>
<td>3</td>
<td>Jan 30th – Feb 3rd, 2017</td>
<td>1</td>
<td>Ch.2 – Statics (Sec 2.4, 2.5, 2.6) (35 pg)</td>
<td>Quiz and/or HW 01 Due Wed Feb 1st</td>
</tr>
<tr>
<td>4</td>
<td>Feb 6th – Feb 10th, 2017</td>
<td>2</td>
<td>Ch.3 -- Analysis of Selected Determinate Structural Systems (Sec 3.1, 3.2, 3.3) (57 pg)</td>
<td>Mid Term Exam (MUST BE PROCTORED) Due Wed Feb 15th</td>
</tr>
<tr>
<td>5</td>
<td>Feb 13th – Feb 17th, 2017</td>
<td>2</td>
<td>Ch.3 -- Analysis of Selected Determinate Structural Systems (Sec 3.4, 3.5, 3.6) (42 pg)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Feb 20th – Feb 24th, 2017</td>
<td>3</td>
<td>Ch.4 -- Load Tracing (Sec 4.1) (pg 56)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Feb 27th – Mar 3rd, 2017</td>
<td>3</td>
<td>Ch.4 -- Load Tracing (Sec 4.2) (pg 56)</td>
<td>Feb 27th - 28th Mardi Gras Quiz and/or HW 03 Due Wed Mar 1st</td>
</tr>
<tr>
<td>8</td>
<td>Mar 6th – Mar 10th, 2017</td>
<td>4</td>
<td>Ch.5 -- Strength of Materials (Sec 5.1, 5.2, 5.3) (pg 38)</td>
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<td>-</td>
<td>Mar 13th – Mar 17th, 2017</td>
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<td>Mar 13th - 17th Spring Break</td>
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<tr>
<td>9</td>
<td>Mar 20th – Mar 24th, 2017</td>
<td>4</td>
<td>Ch.5 -- Strength of Materials (Sec 5.4, 5.5) (pg 11)</td>
<td>Quiz and/or HW 04 Due Wed Mar 22nd</td>
</tr>
<tr>
<td>10</td>
<td>Mar 27th - Mar 31st, 2017</td>
<td>5</td>
<td>Ch.6 -- Cross-Sectional Properties of Structural Members (Sec 6.1, 6.2, 6.3, 6.4) (pg 32)</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Apr 3rd - Apr 7th, 2017</td>
<td>5</td>
<td>Ch.7 -- Bending and Shear in Simple Beams (Sec 7.1, 7.2, 7.3, 7.4 &amp; 7.5) (pg 33)</td>
<td>Quiz and/or HW 05 Due Wed Apr 5th</td>
</tr>
<tr>
<td>12</td>
<td>Apr 10th - Apr 14th, 2017</td>
<td>6</td>
<td>Ch.8 -- Bending and Shear Stresses in Beams (Sec 8.1, 8.2, 8.3, &amp; 8.4) (pg 37)</td>
<td>Apr 14th Good Friday</td>
</tr>
<tr>
<td>13</td>
<td>Apr 17th - Apr 21st, 2017</td>
<td>6</td>
<td>Ch.8 -- Bending and Shear Stresses in Beams (Sec 8.5, 8.6, &amp; 8.7) (pg 36)</td>
<td>Quiz and/or HW 06 Due Mon Apr 17th</td>
</tr>
<tr>
<td>14</td>
<td>Apr 24th - Apr 28th, 2017</td>
<td>7</td>
<td>Ch.9 -- Column Analysis and Design (Sec 9.1, &amp; 9.2) (pg 18)</td>
<td>Second Exam (MUST BE PROCTORED) Due Mon Apr 24th</td>
</tr>
<tr>
<td>15</td>
<td>May 1st - May 5th, 2017</td>
<td>7</td>
<td>Ch.9 -- Column Analysis and Design (9.3 &amp; 9.4) (pg 38)</td>
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<td>Final Exams</td>
<td>May 8th – May 11th, 2017</td>
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<td>No - Final Exam</td>
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* This syllabus may be revised by the faculty at his own discretion. If Syllabus revision are made the students will be notified.