Portland Community College
Sylvania Campus
ENGR 213 Strength of Materials (CRN 20464)
Spring Quarter, 2020

This is a 4-credit course plus a Final Exam during Finals week. The prerequisite for this class is ENGR 211 Statics. The classes will be online until Monday, May 4th. This will be Week 6 of the quarter. The classes will be in room AM112 from 1:00-3:20 pm on Monday and Wednesday.

Course Description: Relationships between stress and strain in deformable solids are studied. Analysis is applied to axially-loaded members, circular shafts, beams, and columns. Combined stresses, statically indeterminate systems and properties of structural materials are included.

The full Course Content and Outcome Guide is available below:
http://www.pcc.edu/ccog/default.cfm?fa=ccog&subject=ENGR&course=213

Instructor: Greg Gerstner

Office: ST 200

Office Hours: Monday and Wednesday from 10:00 am-12:00 pm
Or by appointment.

Phone: (971) 722-4878
Fax: (971) 722-4859
E-mail: greg.gerstner@pcc.edu

Important Deadlines and Dates:

Exams:

- Midterm Exam I: Wednesday, April 22nd
- Midterm Exam II: Wednesday, May 13th
- Final Exam: Monday, June 8th
  The official PCC final exam schedule may be found at
  http://www.pcc.edu/programs/schedules/finals.html

Assignments:

- Homework: typically weekly, see tentative schedule for due dates.
- Online quizzes: typically weekly

Spring Term Campus Closures/ Class cancellations

- Tuesday, April 28th - SAC Inservice – All classes with start times prior to 4 pm are cancelled, student resources will have limited availability.
- Monday, May 25th – College closed:
  holiday The full academic calendar can be
  found at
  http://www.pcc.edu/enroll/registration/academic-calendar.html

Adding and Withdrawals:

- Students are responsible for their enrollment for adding or withdrawing from the course
- The full academic calendar including registration and withdrawal dates can be found at
  http://www.pcc.edu/enroll/registration/academic-calendar.html
- The PCC policy regarding adding and dropping of courses is available at
  http://www.pcc.edu/enroll/registration/dropping.html

Communication:
Students are expected to check their mypcc.edu email and D2L for correspondence.

Required Materials:
Text: *Mechanics of Materials, 7th Ed.*, Beer, Johnston, et al., Publication Date: **2015** | ISBN: **978-007339823-5** | Edition: **7**

Supplies:
- Engineering calculation paper (green or beige is acceptable)
- Mechanical Pencil and eraser
- Ruler or straight edge
- A scientific calculator with capability for trigonometric function, powers, and logarithms. It is strongly recommended that students use a Fundamentals of Engineering Exam compliant calculator (https://ppi2pass.com/faqs/calculator-policy-eng-surv-exams).
- Use of a computer is required for this course to access course content. D2L is used for submittal of homework assignments as well as completion of online quizzes. The computers in the library and the Engineering Lab (AM 103) also have access to MATLAB and Excel.

Grading:
The student work for this course is evaluated in accordance with the PCC grading guidelines available at www.pcc.edu/resources/student-records/grading/
For detail regarding academic standards visit
https://catalog.pcc.edu/academicregulations/gradingguidelines/

Dishonest activities such as cheating on exams and submitting or copying work done by others will result in disciplinary actions including but not limited to receiving a failing grade. See the Academic Integrity Policy [https://www.pcc.edu/resources/academic/standards-practices/academic-integrity.html] for further details.

A student's grade for the course will be weighted as follows:

5%	Textbook problems (homework)
15%	Online Quizzes
25%	Midterm Exam I
25%	Midterm Exam II
30%	Final Exam

Letter Grade: 90-100% = A; 80-89% = B; 70-79% = C; 60-69% = D; 0-59% = F

Please note that 'D', 'F', 'P/NP', 'AUD' grades do not meet prerequisite requirements and are not transferable to Oregon Engineering schools.

An 'I'(Incomplete) grade is reserved for students who have completed a majority of the course requirements and for reasons acceptable to the instructor, cannot complete the course. A written request, signed by the instructor and student, stating the reasons for the incomplete and a schedule for completing course requirements must be filed in the Engineering Office.

Homework (5%):

Homework will consist of weekly assignments of problems from the text generally due on Wednesdays, except at the end of the quarter as a scanned digital upload. Homework is evaluated on completeness only and is not accepted late.
The assignment list will be posted on D2L for the course.

All work submitted must be of professional engineering quality. This means it must be:

- Clearly printed on engineering calculation paper – use only the non-grid side or completed in OneNote or similar software.
- Each page of an assignment **must** include:
  - Your **name**
  - **Assignment number**
  - **Class** (ENGR 213)
- All work submitted must be in ascending problem order with the start of each problem clearly identified.
- Each Problem must include:
  - The problem statement (**Given**) – The given statement must include enough information to complete the problem without any outside reference. It must include a grammatically complete sentence explaining the problem, all given quantities and their associated variable names, and any given graphical information.
  - What you are looking for (**Find**) – Again, it should be clear to the reader what the desired value to be found is without any outside reference.
  - The solution method (**Solution**) - The solution must follow a logical progression. It is **not** sufficient to just show the answer. It must be clear to the reader what assumptions were made, how the problem was approached, and how the solution was found. Solutions must include:
    - A free body diagram (**FBD**) with all forces clearly labeled and coordinate system defined
    - A logical progression from governing equations to final answer.
    - Final answer clearly indicated – It must be boxed and include the appropriate units.
- It is the student's responsibility to ensure that homework assignments are scanned as a single clearly legible pdf by the due date. CamScanner is an option to perform this scanning.

Homework assignments that do not follow these requirements may result in a grade of zero for the assignment.

Online Quizzes (15%):

Weekly quizzes consisting of original problems will be held in D2L. Quizzes are automatically graded and are multiple choice problems. They will close for access on Sunday nights at 11:30 pm.

Exams (Midterm 1 – 25%, Midterm 2 – 25%, Final Exam – 30%):

Exams may include any or all of the following: true/false, multiple-choice, and show work-partial credit type problems.

For a variety of reasons students may wish to take their exam in the testing center. Students that choose to take their exam in the testing center **must** notify their instructor at least **1 week prior** to the exam. Students will then be responsible for scheduling their own appointment at the testing center, if an appointment is necessary. If a student cannot attend the exam, inform your instructor as soon as possible to make arrangements. No makeup exams will be given.

Student Rights and Responsibilities:

As Engineering is a true profession with very high ethical expectations and responsibilities, issues of academic integrity are taken very seriously. Dishonest activities such as cheating on exams and submitting or copying work done by others will result in disciplinary actions including but not limited to receiving a failing grade. It is strongly recommended that students familiarize themselves with the PCC Academic Integrity Policy (https://www.pcc.edu/resources/academic/standards-practices/academic-integrity.html).

Students are required to comply with the Student Rights and Responsibilities Handbook (http://www.pcc.edu/about/policy/student-rights/). The handbook includes the Code of Student Conduct and the Academic Integrity Policy (https://www.pcc.edu/resources/academic/standards-practices/academic-integrity.html).

The handbook also includes information regarding processes and procedures for issues of academic performance and student complaints. It is strongly recommended that students review the handbook.

Ethical Conduct Policy:
Ethical Conduct is required of all PCC students, and cheating or plagiarism (copying) could result in disciplinary action (course failure or expulsion).
You are to avoid the following unethical conduct:

- Discussing with anyone (except the instructor or proctor) exam questions during exam time
- Observing or attempting to observe exam papers of other students
- Utilizing exams from prior courses in ENGR 213 in taking exams
- Possessing notes or other exam aids except as allowed by the instructor
- Copying (plagiarizing) assignments from current or prior students of this course or instructor solutions manuals
- By submitting any assignment or exam, you will be attesting that you have abided by these rules of ethical conduct. Failing to do so may result in a zero exam score or zero assignment mark, or if infractions are continued after one warning, course failure, or expulsion from PCC.
- The instructor or proctor reserves the right to reseat and separate students during exams.

Classroom Rules

- Be respectful
  - Speak to others respectfully.
  - Treat others respectfully in your actions.
  - Only one person speaks at a time.
  - Raise your hand and speak when acknowledged by the instructor.
- Be compassionate
  - Have an awareness that everyone has a life outside of this class
  - Be patient with yourself and others – we are all learning.

Attendance / Make-up Policy:

Students are not graded on attendance, although attendance is recorded. Per the student handbook, students are expected to attend courses they are registered for.

If a lecture will be missed it is the student's responsibility to inform the instructor and to make alternate arrangements for turning in homework, making up any in-class work, and reviewing the notes from lecture. Please note that it can be very challenging to catch up when lecture is missed.
No Shows: If a student stops attending without formally withdrawing, the instructor may assign the grade the student will have earned based on evaluation of the student's work submission prior to their absence.

This may result in course failure, or an 'F' grade. Also, the no-show student is held financially responsible for the course tuition.

Extra Credit:
Opportunities for extra credit may be presented throughout the term at the instructor's discretion.

Title IX/Non-Discrimination statement:
Portland Community College is committed to creating and fostering a learning and working environment based on open communication and mutual respect. If you believe you have encountered sexual harassment, sexual misconduct, sexual assault, or discrimination based on race, color, religion, age, national origin, veteran status, sex, sexual orientation, gender identity, or disability please contact the Office of Equity and Inclusion at (971) 722-5840 or equity.inclusion@pcc.edu.

Sanctuary College statement:
PCC is a sanctuary college. For more information and resources, see www.pcc.edu/resources/undocumented-students/ .

ADA Accommodation:
Students working with the Office for Students with Disabilities that may require classroom or course adjustment or accommodation should make their needs known to the instructor as early as possible.

The Office for Students with Disabilities may be contacted at:

Disability Services
Sylvania ST 229
Portland, OR 97219
Phone: 971-722-4341 (Voice)
Email: disability.services@pcc.edu

Flexibility:
The instructor reserves the right to modify course content and/or substitute assignments and learning activities in response to institutional, weather, or class situations.

Additional Resources:

There are a wide variety of resources on campus from accessibility to tutoring, all free to students. These include but are not limited to the following:

- Your first resources are your fellow students. Students are encouraged to form study groups and AM 103 and HP 202 are often open for student study. A student-run Saturday Lab 9am -1pm in LIB 138 is also active.
- MakerLab – Located in AM 101, for more information contact Amy Petit (amy.petit@pcc.edu)
- Engineering Lab – Located in AM 103, for more information contact Richard Dawes (rdawes@pcc.edu)
- HP 202 – Physical Sciences Tutoring, tutor availability varies by term. Hours are M-Th 10am-6pm, Fri 10am – 4pm, and Sat. 10am-3pm.
- Sylvania Veterans's Resource Center – Located in CC 220. Hours vary by term. *The Sylvania Veterans Resource Center provides a sense of community to our student veteran population. We aim to be your "one stop shop" whether you are brand new to PCC or have been taking classes for a while. We have something for everyone! The Sylvania Veterans Resource Center welcomes all vets, veteran family members, friends, and anyone who wants to know more about vets on campus.* For more information please email vrc.sy@pcc.edu.
- Sylvania Multicultural Center – Located in CC 267B. Hours vary by term. *The MC values academic achievement, community-building, and social justice, which is demonstrated through our services and resources, activities and events, and wide variety of leadership opportunities for all students!* For more information please visit or contact culture@pcc.edu.
- Sylvania Student Learning Center – Located in Sylvania Library 140. Hours and support varies by term. The engineering help is available and the current tutoring schedule is available online (https://www.pcc.edu/tutoring/sylvania/student-success/).
- And many more…

I'll probably say it many times during the quarter, but thank you for your flexibility and understanding during this unprecedented Spring quarter of 2020. We all are making head-spinning adjustments in real-time which takes determination and patience. I appreciate your desire to learn some ENGR 213 Strength of Materials which explains a great deal of why the built environment looks the way it does. It also aids in the creation and design of things that don't break (unless you want them to!) I will be doing my best to facilitate your learning and keep it enjoyable at the same time.

Be well, Greg