

ENGINEERING ANALYSIS ENGS 192

Spring 2024

Meeting Space: Lucas Hall 110

Time: Mondays 2:20 pm – 5:20 pm

Instructor: Dr. Okioga

Office Location: Trexler 264B

Email: okioga@roanoke.edu

Office Hours (By Appointment Only):

- Virtually: Tuesdays, Thursdays, and Friday: 12:00-1:00pm
- In Person: Mondays: 1:00 pm – 2:00 pm

1. Course Overview and Specific Learning Outcomes:

Successful students will be able to:

- a) Demonstrate competence in implementing the engineering design/analysis process to outline constraints and identify stakeholders, use data-driven methods to systematically make and articulate decisions.
- b) Communicate engineering process and solutions to technical audiences (design briefs/posters/PowerPoint/oral presentations).
- c) Demonstrate teamwork skills throughout the process.
- d) Evaluate and communicate ethical, sustainability and environmental implications of engineering solutions.

2. Required Materials:

- a) Laptop with Microsoft Office products
- b) Engineering Graph Paper
- c) Mechanical pencils (HB or B lead)
- d) Basic ruler/straight edge
- e) Hagen, K. D. (2013). Introduction to Engineering Analysis (4th Edition). Pearson Education (US).

3. **Attendance:** Each student is expected to attend every class and is accountable for missed content and assignments. Attendance will be taken at the beginning of every class meeting. If you arrive late it is your responsibility to make sure you are not marked absent in my grade book. Your fourth and each additional absence will result in a 2-point reduction in your final course grade. You get three freebies so that I do not have to distinguish between excused and unexcused absences. College athletes will be afforded wiggle room; please come see me immediately if you are an athlete. If you should have an emergency that requires you to miss a large chunk of the course, please notify me ASAP. If you have a temperature of 100.4 or higher or other flu or COVID symptoms, don't come to class. Having a fever is a good reason for students to miss class. If you have exceeded your freebies

and don't want to be penalized due to illnesses, be sure to have a note from your Doctor or from Student Health. Wearing a mask while out and about if you feel a bit ill is good for everybody.

4. **Grading:** Standard letter grades (A–F) are assigned according to the following scale for this course:

“A” (91–100), “B” (81–90), “C” (71 - 80), “D” (60–70), “F” (< 60).

Final grades will be based on the following course components:

50% Unit Exams (5)

40% Unit Quizzes

10% Participation

LATE WORK POLICY

There will be a 10% deduction for late work. Work turned in after one day will receive a maximum of 80% for your late work that has been turned in, and after one week you will not be able to receive any credit for that work, as it will receive zero points. For a medical or other emergency, I will need timely notice via email and a face-to-face discussion (after the situation is handled) with corroboratory evidence provided by you.

5. **Testing:** Tests will be administered at the end of each Unit listed in the schedule.
6. **Test make-up:** Late submission of work or make-ups due to absences will only be allowed for legitimate reasons that must be reported with appropriate documentation/certifications. Any make-up/late submission must be within one week of the missed submission deadline or within one week of returning to class if based on certified absences and as dictated by Roanoke College policies.
7. **Expected Number of Hours of Work per Week:** This course expects you to spend at least 12 hours of work each week inside and outside of class
8. **Academic Integrity:** Roanoke College (RC) policies of [academic integrity](#) are enforced in all aspects of this course, and it is the responsibility of the student to be aware of these policies and to strictly adhere to them. Plagiarism and cheating are unacceptable and also violate RC policies. Being aware of others' such violations and not reporting it is also considered a contributing aspect of cheating. To avoid plagiarism, all source material must be properly cited using the MLA conventions, and paraphrased using your own words or otherwise using quotations when appropriate. Drafts must include citations. In addition to myself, the Writing Center can offer assistance and other resources for writing and presentation. Since an emphasis on the course work is based on analytical and critical thinking, you are discouraged from using AI tools to create reports in your work. Any work submitted using AI tools will be treated as though it was plagiarized.

9. **Office Hours:** I will be available to meet virtually between 12 and 1pm on Tuesdays, Thursdays and Fridays. I will be able to meet in person on Mondays from 1:00 pm – 2:00 pm (before class). Appointments are required for all meetings. I will initiate and send meeting invitations and links for confirmed virtual appointments.
10. **MCSP Conversation Series:** You are encouraged to attend at least 2 of the several MCSP talks offered throughout the semester and write a ½ page paper on your reflections of the talk. The reflection papers are due within one week of the talk. MCSP credits will be factored in while determining the final grade. This particularly helps students who are on the cusp of a letter grade.
11. **Class Disruption:** All students are entitled to a professional learning environment. Students should not act in a manner which will distract and disrupt the class learning experience. Such practices will not be tolerated. Cell-phones or any other electronic communication/entertainment devices, except for tablets/laptops used for taking notes, must be either turned off or silenced at all times during the lecture period.

Schedule:

- Unit 1 – Chapters 1, 2 – The Role of Analysis in Engineering and Methodology
- Unit 2 – Chapter 4 – Mechanics
- Unit 3 – Chapter 5 - Electrical Circuits
- Unit 4 – Chapter 6 – Thermodynamics
- Unit 5 – Chapter 7 - Fluid Mechanics

Final Exam Week: April 25th