

ENGINEERING ANALYSIS
Spring 2022

Location: Trexler 372
Instructor: Prof. Dana Hargrove
Office Hours: By Appointment

Time: T/Th 1:10-2:40pm
E-mail: dhargrove@roanoke.edu
Office: Trexler 270J

Required Materials:

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

Expected learning outcomes: Successful students will be able to –

1. 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.
2. Communicate engineering process and solutions to technical audiences (design briefs/posters/PowerPoint/Prezi/oral presentations).
3. Demonstrate teamwork skills throughout the process.
4. Evaluate and communicate ethical, sustainability and environmental implications of engineering solutions.

Attendance: 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. Please do not contact me with excuses about absences. 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.

Masks: The College has issued a mask mandate for the start of the semester that requires masks to be worn in indoor common spaces such as our classroom. You must wear a mask in this class. If you arrive without a mask, you will not be allowed to stay and may lose credit for attendance or in-class work. The Bookstore sells masks if you need to make a quick purchase. If the mandate is extended, you will be required to continue to wear a mask.

COVID Illness: If you have a temperature of 100.4 or higher or other COVID symptoms, don't come to class. Call Health Services IMMEDIATELY. Do not come to class or go to any public area on campus. In order for your absence to be excused, you must give Health Services permission to notify me that you have consulted them about COVID symptoms. If Health Services informs you that you should isolate and not attend class for multiple days, inform me so that we can make a plan to keep you current in the course. All absences caused by consultation with Health Services about coronavirus symptoms or isolation ordered by Health Services will be excused but you will need to do the work and graded assignments even if we extend a deadline for you.

Academic Integrity: Policies of academic integrity are enforced in all aspects of this course. It is the responsibility of the student to strictly adhere to the policies of Academic Integrity of Roanoke College. 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.

"Academic Integrity" page on the RC website– https://www.roanoke.edu/inside/a-z_index/academic_affairs/academic_integrity

Included in this page is an explanation of how violations of the College's academic integrity policy are handled.

GRADING:

Grades: 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).

Grades will be weighted according to the following percentages:

- 50% Unit Exams (5)
- 20% Unit Quizzes
- 20% In-Class Assignments
- 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.

The Writing Center @ Roanoke College, located on the Lower Level of Fintel Library (Room 15), offers free tutorials focused on writing projects and oral presentations for students working in any field. Writers and presenters at all levels of competence may visit the Writing Center at any point in their process—including brainstorming, drafting, organizing, editing, or polishing presentation skills—to talk with trained peer tutors in informal, one-on-one sessions. The Writing Center is open Sunday through Thursday from 4 to 9 PM. Simply stop in, or schedule an appointment at www.roanoke.edu/writingcenter. Questions? Email writingcenter@roanoke.edu or call 540-375-4949.

MCSP Colloquium Series: You are encouraged to attend at least 1 of the several talks as a part of the MCSP colloquia this semester. After attending, write a paper on your reflections of the talk to get full credit (1/2 page). 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.

I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records.

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

Tests will be administered at the end of each Unit.

FINAL EXAM WILL TAKE PLACE ON TUESDAY, MAY 3 FROM 8:30-11:30AM