New York University Tandon School of Engineering
General Engineering
Course Syllabus *EG 1003 Introduction to Engineering and Design (3 Credits)*
Fall 2020
Professor Jack Bringardner
Lecture Wednesday 12:50 pm - 1:50 pm; Online
Weekly Lab (3hr) and Recitation (2.5hr) Times and Locations Vary by Section

To contact professors: **Contact the section recitation professor first**
For course wide issues contact Professor Bringardner
jack.bringardner@nyu.edu
JB 256A
Phone: (646) 997-4058
Office hours: by appointment

Fall 2020 COVID-19 Response

Students have the ability to take as much of the course that they want online. Students should not hesitate to stay online if they do not feel comfortable attending in-person, All portions of the course listed as in-person below can be completed remotely on Zoom.

Recitations will occur in-person. Students can choose to either attend recitation in-person or online. Students who attend the class online will have the opportunity to participate in all the same activities that would occur in-person.

Labs will occur in-person. Students will be required to wear face shields, masks, and gloves while participating in labs in-person. Students who attend labs online will work with students who are in person to complete the lab virtually.

Lectures will be conducted through a webinar series. Students will answer questions throughout the lecture in order to ensure they fully understand the material.

Course Prerequisites

There are no prerequisites for EG 1003 Introduction to Engineering and Design.

Course Description

This course will provide an understanding of what professional engineers do. You will be exposed to experimental techniques, design skills, teamwork, and the tools of the trade in order to establish a foundation for further study. In this context, an emphasis will be placed on developing communication skills: oral and written.

EG 1003 is a survey course for engineering topics, including industry software and hardware associated with these topics. Design and project management skills are developed throughout a semester-long project. Disciplines within engineering will be introduced during lecture, and explored through practice in laboratory assignments.

Course Objectives

- To interpret clearly and concisely an experimental procedure, results, and conclusions in a technical presentation and report.
- To function well on a team, to articulate aspects of successful teamwork, and to self-assess the success of a team.
- To schedule, budget, and complete an open-ended engineering design project.
- To document an application of the engineering design process to solve a problem.

Course Structure

Labs (8 lab experiments and 5 project model shop sessions)
Semester-Long Design Project (outside of class time in open lab)
Lectures (10 topics with guest speakers and professors from different departments)
Recitations (13 classes including 11 presentations)

Required Materials

There is no required textbook for this course. You will need various software. All course material and required reading is on the EG 1003 Lab Manual.

Course Policies

Lab attendance is based on the lab quiz. After it has been given, you will receive a zero on the quiz, and be able to join the lab if time remains. If time does not remain, you must submit a makeup request and perform the lab during open lab. Each lab has an associated lab report that is due one week after the lab is performed.

Lecture attendance is mandatory. Attendance will be taken virtually. Students attending the class will be able to watch a recording of the lecture.

Recitation attendance is mandatory. Contact your recitation professor before recitation to determine whether your lateness or absence is excused.

Grades

Item	**Breakdown**
Teaching Assistant Lab Reports (Technical Content)	20%
Writing Consultant Lab Reports (Writing Skills)	20%
Lab Quizzes	5%
Recitation Presentations	15%
Semester-Long Design Project	30%
Lecture Attendance	10%
Total	**100%**

Course Topics

Labs (for each lab you will submit a lab report and give a presentation*)
Lab 1 – Introduction to Microsoft Office & 3D Printing
Lab 2 – CAD Competition
Lab 3 – Prototyping with Microcontrollers, Sensors, and Materials
Lab 4 – Model Shop Session I & Virtual Product Dissection
Lab 5 – Sustainable Energy Vehicle
Lab 6 – Model Shop Session II (Benchmark A Deadline)
Lab 7 – Boom Construction Competition
Lab 8 – Water Filtration
Lab 9 – Model Shop Session III (Benchmark B Deadline)
Lab 10 – LabVIEW/Digital Logic
Lab 11 – Biomedical Forensics
Lab 12 – Early Submission Deadline
Lab 13 – Final Submission Deadline

Recitations
Recitation 1 – Introduction to EG1003 & SLDPs (Semester-Long Design Projects)
Recitation 2 – Semester-Long Design Projects
Recitation 3 – Lab 2 Presentation
Recitation 4 – Lab 3 Presentation
Recitation 5 – Milestone 1 Presentation
Recitation 6 – Lab 5 Presentation
Recitation 7 – Milestone 2 Presentation
Recitation 8 – Lab 7 Presentation
Recitation 9 – Lab 8 Presentation
Recitation 10 – Milestone 3 Presentation
Recitation 11 – Lab 10 Presentation
Recitation 12 – Lab 11 Presentation
Recitation 13 – Final Presentation

Lectures (subject to change)

Topic	**Lecturer**
Introduction to EG1003	Jack Bringardner, EG 1003 Director
Teamwork	Doris Schultz, Tandon Research
User Experience Design & Career Services	Regine Gilbert, Tandon TCS
Artificial Intelligence/Machine Learning/Computer Science	Mellisa Goldman, CIO JP Morgan
Writing Engineering Reports	Duncan Osborne, EG 1003 WC
Civil and Environmental	Andrea Silverman, Tandon CUE
Chemical Engineering	Yanir Maidenberg, Tandon CBE
Electrical Engineering	Mike Knox, Tandon ECE
Mechanical Engineering	Vittoria Flemini, Tandon MAE
World Trade Center	Peter Rinaldi, NYNJ Port Authority

Semester-Long Design Project
Milestones 1, 2, 3 (3 project update presentations in recitation)
Benchmark A, B (2 project deadlines due in model shop lab sessions)
Commissioning (completion of all project tasks)
Submission (submitting all supporting documentation)
Final Presentation (project sales pitch during the last recitation)

NYU Resources

Moses Center Statement of Disability
If you are a student with a disability who is requesting accommodations, please contact New York University's Moses Center for Students with Disabilities (CSD) at 212-998-4980 or mosescsd@nyu.edu. You must be registered with CSD to receive accommodations. Information about the Moses Center can be found at www.nyu.edu/csd. The Moses Center is located at 726 Broadway on the 2nd floor.

NYU School of Engineering Policies and Procedures on Academic Misconduct *(from the School of Engineering Student Code of Conduct)*

A. Introduction: The School of Engineering encourages academic excellence in an environment that promotes honesty, integrity, and fairness, and students at the School of Engineering are expected to exhibit those qualities in their academic work. It is through the process of submitting their own work and receiving honest feedback on that work that students may progress academically. Any act of academic dishonesty is seen as an attack upon the School and will not be tolerated. Furthermore, those who breach the School's rules on academic integrity will be sanctioned under this Policy. Students are responsible for familiarizing themselves with the School's Policy on Academic Misconduct.

B. Definition: Academic dishonesty may include misrepresentation, deception, dishonesty, or any act of falsification committed by a student to influence a grade or other academic evaluation. Academic dishonesty also includes intentionally damaging the academic work of others or assisting other students in acts of dishonesty. Common examples of academically dishonest behavior include, but are not limited to, the following:

    1. Cheating: intentionally using or attempting to use unauthorized notes, books, electronic media, or electronic communications in an exam; talking with fellow students or looking at another person's work during an exam; submitting work prepared in advance for an in-class examination; having

someone take an exam for you or taking an exam for someone else; violating other rules governing the administration of examinations.
2. Fabrication: including but not limited to, falsifying experimental data and/or citations.
3. Plagiarism: intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise; failure to attribute direct quotations, paraphrases, or borrowed facts or information.
4. Unauthorized collaboration: working together on work that was meant to be done individually.
5. Duplicating work: presenting for grading the same work for more than one project or in more than one class, unless express and prior permission has been received from the course instructor(s) or research adviser involved.
6. Forgery: altering any academic document, including, but not limited to, academic records, admissions materials, or medical excuses.

Academic Misconduct Reporting

Academic misconduct and issues of academic integrity arising from academic programs and activities will be reviewed by faculty members in cooperation with the Coordinator of Advocacy and Compliance, and in accordance with policies and procedures. If there is a case of academic misconduct, we will inform Deanna Rayment of NYU Tandon Student Affairs. Please visit the NYU Tandon Student Code of Conduct for more detailed information.

Religious Accommodations and Support

The School of Engineering's policy requires students provide Deanna Rayment, the Coordinator of Student Advocacy, Compliance, and Student Affairs with written notification 14 days in advance of the days to be taken off along with the Excused Absence Form. Once the above is received and confirmed, faculty will receive a written request for the absence to be excused.

Mental Health Statement

As a student you may experience a range of issues that can cause barriers to learning. These might include strained relationships, anxiety, high levels of stress, alcohol/drug problems, feeling down, or loss of motivation. NYU Wellness Exchange can help with these or other issues you may experience. Help is always available. You can learn about free, confidential mental health services available to you at the NYU Wellness Exchange.

Violence Prevention Statement

NYU is committed to fostering a safe, productive learning environment. Title IX and our campus policy prohibit discrimination on the basis of sex or gender identity, which includes forms of sexual misconduct such as sexual assault, sexual harassment, dating violence, domestic violence, and stalking. We understand that sexual violence can undermine students' academic success and we encourage students who experienced any form of sexual misconduct to talk about their experience so they can get support. NYU offers resources and options for students impacted by sexual assault, sexual harassment, dating violence, domestic violence, and stalking. Learn about the free, confidential services by visiting the NYU Title XI Office website.

Non-Discrimination Statement

NYU is committed to maintaining an environment that encourages and fosters appropriate conduct among all persons and respect for individual values. Discrimination or harassment based on race, gender and/or gender identity or expression, color, creed, religion, age, national origin, ethnicity, disability, veteran or military status, sex, sexual orientation, pregnancy, genetic information, marital status, citizenship status, or on any other legally prohibited basis is unlawful and undermines the character and purpose of the University. Violations should be reported to the NYU Title XI Office website