

New York University Tandon School of Engineering
General Engineering
Course Syllabus *EG 1003 Introduction to Engineering and Design (3 Credits)*
Fall 2017

Professor Gunter Georgi

Lecture Wednesdays 12:45-2:15 PM; Dibner Library, Pfizer Auditorium
Weekly Lab (3hr) and Recitation (1.5hr) [Times](#) and [Locations](#) Vary by Section

To contact professor: **Contact the section [recitation professor](#) first**
For course wide issues contact Professor Georgi
gunter.georgi@nyu.edu
Rogers Hall, Room 522
Phone: (646) 997-3701
Office hours: by appointment

Course Pre-requisites

There are no pre-requisites 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](#) (9 lab experiments and 4 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 taken in the first five minutes. If you are late for lecture you will lose credit for that lecture, but are allowed to attend.

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

Grades

<i>Item</i>	Breakdown
<i>Teaching Assistant Lab Reports (Technical Content)</i>	20%
<i>Writing Consultant Lab Reports (Writing Skills)</i>	20%
<i>Lab Quizzes</i>	5%
<i>Recitation Presentations</i>	15%
<i>Semester-Long Design Project</i>	30%
<i>Lecture Attendance</i>	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, [Mousetrap Vehicle Competition](#)

Lab 2 – [Hot Air Balloon Competition](#)

Lab 3 – [Product Evaluation and Quality Improvement](#), [Prototyping with Microcontrollers and Sensors](#) (Section E2 Only)

Lab 4 – [Introduction to LabVIEW](#) (Tour of the NYU Tandon MakerSpace)

Lab 5 – [Digital Logic](#)

Lab 6 – Model Shop Session I (Benchmark A Deadline)

Lab 7 – [Electronic Filters](#) or [Renewable Energy Competition](#) (See Your [Schedule](#))

Lab 8 – [Biomedical Forensics](#) or [Lemon Car Competition](#) (See Your [Schedule](#))

Lab 9 – Model Shop Session II (Benchmark B Deadline)

Lab 10 – [Boom Construction Competition](#)

Lab 11 – [Heat Transfer and Thermal Insulation Competition](#)

Lab 12 – Early Submission Deadline

Lab 13 – Final Submission Deadline

* *Lab 1 and Lab 4 do not have presentations*

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)

Lectures (subject to change)

<i>Topic</i>	Lecturer
<i>Introduction to EG1003</i>	Gunter Georgi
<i>Aerospace/Apollo/LM</i>	Gunter Georgi
<i>Teamwork</i>	Head EG TAs
<i>Project Management</i>	David Doucette
<i>Civil Infrastructure</i>	Lawrence Chiarelli
<i>Digital Logic</i>	Haldun Hadimioglu
<i>Cybersecurity</i>	Nasir Memon
<i>Robotics</i>	Vikram Kapila
<i>Chemical Engineering</i>	Joshua Gallaway
<i>Leadership</i>	David Doucette
<i>Patents & Poly Incubators</i>	Kurt Becker

Recitations

- Recitation 1 – Introduction to EG 1003
- Recitation 2 – Introduction to SLDPs (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

Moses Center Statement of Disability

If you are 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.