GEORGIA INSTITUTE OF TECHNOLOGY
George W. Woodruff School of Mechanical Engineering
ME 2110 - Creative Decisions and Design, Spring 2021

Lecture: Asynchronous, posted on main ME2110 website
Studio: Various Times, mixture of synchronous online and in IDEA Laboratory, MRDC 2101

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Course Objectives: To learn the fundamental procedures for solving engineering design problems; the essential details of analyzing, synthesizing, and implementing design solutions with flexibility, adaptability, and creativity; the techniques which allow an engineer to tackle new, unsolved, open-ended problems. To learn by doing through team and individual projects and assignments.

Course Delivery: Lectures in the main section (Section A) will be delivered asynchronously through pre-recorded lectures and will be announced/released on the main ME2110 website. Studio sections will be delivered synchronously and will meet by web conferencing (BlueJeans or Microsoft Teams) or in-person in MRDC2101.
depending on the specific week during the semester. Studio sections will also rely on Microsoft Teams for synchronous chat-based communication with studio instructors. All course-wide communications will utilize the main ME2110 website. All studio-level communications, submissions and assessments will use Canvas.

**Recommended Reference Materials (not required):**
1. W. Singhose, J. Donnell, Introductory Mechanical Design Tools, [www.lulu.com/content/3365814](http://www.lulu.com/content/3365814)

**Technology Requirements:** For ensuring successful online delivery of the course, you must have access to a stable internet connection. Your computer must meet these conditions as well: (1) capable of audio/video webconferencing with a functioning microphone and camera, (2) have the BlueJeans application installed, (3) have Microsoft Teams installed. You must also have SolidWorks 2020 installed or access to it via GT’s myCloud. In this course, we will also be utilizing Inkscape, Trotec JobControl, Cura and Arduino IDE. Some of these may be useful for you to have on your personal machines if possible.

**COVID-19 Laboratory Safety:** In-person activities for ME2110 are limited to fabrication-related exercises throughout the semester. All non-fabrication exercises will be conducted virtually. For in-person activities, measures have been taken to promote safety of the laboratory experience. These measures include capacity-restricted, reservation-only access to the IDEA laboratory outside of scheduled studio section hours. Users are requested to adhere to GT and building policy guidelines, including wearing of facial coverings and maintaining of social distancing guidelines. The laboratory workspace has been equipped with physical barriers for flexible physical separation of users, UV-based safety glass disinfection cabinet, floor markings and a non-contact forehead thermometer. All users are asked to verify concordance with GT policies regarding identification of illness on a daily basis. If you fall ill during the course of ME2110 with symptoms associated with COVID-19, immediately notify your instructor and TA and refrain from accessing the IDEA laboratory until you meet the return to campus conditions identified by GT. More detailed access policies and guidelines will be reviewed before the commencement of any in-person activities, currently scheduled to begin in Week 3 of the semester.

**Course Assessment (100%):**
1) Class Participation 10%
2) Studio Preparedness 10%
3) Lab Stewardship 5%
4) Homework 10%
5) First Studio Report 5%
6) Introductory Project and Presentation 10%
7) Major Project 50%
   - Design Report and Presentation (10%)
   - Sprint 1 Deliverable (10%)
   - Sprint 2 Deliverable (10%)
   - Design Review Components (5%)
   - Final Deliverable (15%)
8) Safety Training and IDEA Lab User Agreement P/F*
9) Give at Least 1 Oral Presentation P/F*
10) Mechatronics and Fabrication Task Completion P/F*
11) Participate in Design Review / Final Competition P/F*

*Note: Receiving an F for a P/F item will result in 1 letter grade reduction in your final grade for every F received.

**Design Review and Final Competition:** The design review is a virtual live event where your team will present their robot designs to a judging team to evaluate your team’s design in multiple categories. Tentatively, this will also involve a competition-style event of team robots. These are set to occur from 430-830PM on Friday April 16. All students must attend virtually by teleconference.

**Reports and Presentations:** All assignments must have a cover page and be labeled with your name, section instructor, section TA, and section time. When doing group work, all names must be on the assignment and each group member will receive the same grade. Late work is NOT accepted.
Class Participation and Studio Preparedness: Class participation grades will be based on your relative performance on your teams, this measured using structured peer evaluations as well as instructor evaluations of your participation in studio. Studio preparedness will be evaluated as determined by section instructor.

Lab Stewardship: Safe lab practices and respect for the open studio space is of critical importance to maintaining a safe working environment for all students and employees. It is also the hallmark of operational excellence in a professional shop environment. Violations of safe lab practices as explained during IDEA lab training including, but not limited to, tool misuse and lack of shop cleanliness, failure to follow laboratory guidelines, will be noted. Each violation will count as 1% demerit on the final grade. Students may earn back credit lost for IDEA lab violations by participating in positive lab stewardship activities (e.g., shop cleaning tasks, shop improvement activities). Students can consult the head TAs or TA on duty for these positive lab stewardship activities. The number of demerits that may be earned back through these activities are limited to 2 total.

Attendance Policy: You will be working on teams on projects for this course. Therefore, you are required to attend all studio sessions. You are required to review recorded lectures. Missing studios will result in a final grade penalty where 1 missed studio equates to 1 letter grade reduction. Due to the size of this class, as well as the critical nature of the material (including safety issues), it is important that you are present to stay up to date with the course. Furthermore, this is a common time to touch base with your teams. Therefore, if you miss studios your teammates may be inclined to give you poor reviews that will adversely affect your grade. As a result, missing studios will have a significant negative impact on your grade. In particular, if you arrive to studio late, you will be marked as tardy. Late is defined as the time between the start of studio 15 minutes past the studio start. After 15 minutes late, you are considered absent. Two tardy marks are equivalent to 1 missed studio. We will round down to the lowest integer when determining if your combination of tardy and absent marks will affect your grade. Attendance will be taken by your studio TA. In the case of a personal emergency or Institute-approved absence, please consult the information on the Division of Student Life website (http://studentlife.gatech.edu/content/class-attendance) and follow the appropriate steps. The Dean of Students Office will make the decision and contact your professor stating what (if any) accommodations will be provided. Please notify your instructor and TA immediately if you have any COVID-related illness as well.

COVID-19 Guidance: During the semester, you may be required to quarantine or self-isolate to avoid the risk of infection to others. Quarantine is the separation of those who have been exposed to someone with COVID-19 but who are not ill; isolation is the separation of those who have tested positive for COVID-19 or been diagnosed with COVID-19 by symptoms. If you have not tested positive but are ill or have been exposed to someone who is ill, please follow the COVID-19 Exposure Decision Tree for reporting your illness. During the quarantine or isolation period you may feel completely well, ill but able to work as usual, or too ill to work until you recover. When in isolation or quarantine you will be unable to attend in-person course sessions but your instructor may require you either to participate in the course remotely, complete some complementary work that parallels what you are missing in class, or make up some class work when you return. If you are ill and unable to do course work this will be treated similarly to any student illness. The Dean of Students will have been contacted when you report your positive test or are told that it is necessary to quarantine and will notify your instructor that you may be unable to attend class events or finish your work as the result of a health issue. Your instructor will not be told the reason. We have asked all faculty to be lenient and understanding when setting work deadlines or expecting students to finish work, and so you should be able to catch up with any work that you miss while in quarantine or isolation. Your instructor may make available any video recordings of classes or slides that have been used while you are absent, and may prepare some complementary asynchronous assignments that compensate for your inability to participate in class sessions. Ask your instructor for the details.

Mental Health & Wellness: As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, depression, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student’s ability to participate in daily activities. GT offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know is experiencing any
of the issues noted above, consider utilizing the confidential mental health services available on campus. I encourage you to reach out to GT CARE (www.care.gatech.edu, 404-894-3498) or the Counseling Center (www.counseling.gatech.edu, 404-894-2575) for support. An on-campus counselor or after-hours services are available to assist you.

**Problem Escalation:** The course coordinators and studio instructors are available by e-mail or office hours or if you need assistance, and can schedule appointments outside of office hours. If you need help and/or have a problem, the best course of action is to first address the issue within your studio section with your TA and/or your studio professor. This is especially true for grading on assignments and reports, which is controlled by your studio professor. For course-level questions and concerns, the lead TAs and course coordinators are here to help.

**NOTE:** This class CANNOT be dropped.