

GT 2201**GRAND CHALLENGES RESEARCH PROJECTS**

Fall 2026

Location: Britain Rec or Microsoft Teams

Time: TBA

Office Hours: By Appointment

Credits: 1 hours

Instructor**Dr. Jeffrey Davis**

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Graduate Advisors**TBA****TBA****TBA**

Course Overview:

To prepare the next generation of students to tackle 21st-century challenges, collegiate education must commit to exposing students to societal problems in addition to building technical competencies. In this course, you will engage in a multidisciplinary hands-on team project to develop a solution to a chosen Grand Challenge problem, determine the riskiest assumption in both the problem and solution space, develop early testing strategies to evaluate these assumptions, build a minimal viable product to understand the value for your user, and pursue external funding to support your team's future growth and development. This course will culminate with a presentation of the solution that your team has developed, including a discussion of the anticipated impacts of your solution on the chosen Grand Challenge.

Course Objectives

This course is designed to meet the following objectives:

1. Provide students with an opportunity to develop problem-solving, analytical, and critical thinking skills in order to find solutions to real-world problems.
2. Enhance leadership and team building skills through a product design experience.
3. Develop student ability to work and communicate effectively both individually and within multidisciplinary teams.

Learning Objectives

Upon completion of the course, students will be able to:

1. Develop effective leadership skills for managing personal and team workloads to accomplish agreed-upon objectives.
2. Cultivate an advisory relationship with at least one technical expert in the problem space of interest.
3. Synthesize problem space, product, and business model knowledge through qualitative and quantitative user development.
4. Design and build a minimum viable product.
5. Create the foundations for an effective business model and articulate that model through a compelling pitch to secure external funding.

Assessment:

Learning Obj	Assessment	Grading Scale	Total Possible Points
1	Weekly Status Updates	0 or 1 or 2	30
1	Team Organization and State of Team	0 or 10	10
3	Team Assessment Survey	0 or 10	10
2	External Technical Advisor	0 to 10	10
3	Mid-Term Status Presentation	0 to 10	10
2,4	Final MVP presentation	0 to 30	30

Rubrics and detailed descriptions for each assessment will be shared on Microsoft Teams.

Books and Materials

We will also be using three books for the course this semester. We will have three class periods to reflect and discuss each book as a group. Make sure you come to class with at least one idea in the book that resonated with you and one idea that did not!

- (1) Constable, Giff. 2014. *Talking to Humans: Success Starts with Understanding Your Customers*.
- (2) Lencioni, Patrick. 2002. *The Five Dysfunctions of a Team*.
- (3) Chang, Ann. 2019. *Lean Impact: How to Innovate for Radically Greater Social Good*.

Student-Faculty Expectations

At Georgia Tech, we believe that it is important to continually strive for an atmosphere of mutual respect, acknowledgment, and responsibility between faculty members and the student body. See <http://www.catalog.gatech.edu/rules/22/> for an articulation of some basic expectations—that you can have of us, and that we have of you. Respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, we encourage you to remain committed to the ideals of Georgia Tech while in this class.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. For more information on Georgia Tech's Academic Honor Code, please visit <http://osi.gatech.edu/content/honor-code>. Writing with authority and honesty requires explaining the sources of the information you reference. All material should be cited using APA or MLA format, which is explained here: <http://libguides.gatech.edu/citationtools/apacit>

ADA Accommodations

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (ODS), <http://disabilityservices.gatech.edu/>, as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail us as soon as possible in order to set up a time to discuss your learning needs. If any occurrence of disability changes within the semester, please inform us as soon as possible.

Schedule Changes & Communication Policies

Throughout the semester, events may require the instructor to rearrange class topics due to speaker availability, sickness, severe weather, etc. Schedule changes will be announced on Microsoft Teams and in class. As a student in this course, you are expected to refer to our course on Microsoft Teams on a daily basis to ensure you are up to date on announcements, grades, and assignments. For any course-related questions, you are expected to communicate with the instructor in Microsoft Teams or directly by email (jeff.davis@ece.gatech.edu). Communication received Microsoft Teams will guarantee a prompt response.