

Your Idea, Your Invention

GT 2303 | Spring 2013 | T Th 12:05 pm - 01:25 pm | Library East Commons

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Course Description

This course provides practice-based fundamentals to students interested in invention: ideas and actions that create value and lead to positive change. In this course, invention is considered in the broadest sense. Examples include not only technologies, but the U.S. Constitution, games, manifestos, economic theories, symphonies, and systems like the cloverleaf for traffic control.

Freshman and sophomore students will work in multidisciplinary teams to discover opportunities for invention and create their own novel solutions. The course is team taught within an active, project-based format and emphasizes skills in ideation, discovery, and execution.

Course Objectives

It is our goal that you develop the following skills in this course:

- Concrete skills for initiating, developing, and executing novel projects
- The ability to work beyond simple problem/solution thinking to develop projects in ill-constrained environments
- Interdisciplinary teamwork skills
- Presentations skills: the ability to represent and communicate ideas.

In addition, we will:

- Introduce you to invention resources at Georgia Tech so that you may continue to initiate, develop, and execute projects during your time here.

Course Structure and Activities

Come to class prepared to participate. The course consists of three parts. The first part is a series of activities to support ideation. The second and third parts consist of a project cycle each. Students will work on these projects in small, interdisciplinary teams. In addition to coursework, students are asked to keep a journal for ideas, notes, and assigned reflections.

Part 1: Ideas | 4 weeks (January)

This phase consists of exercises that support broad and flexible thinking as well as the convergence of many ideas to a project idea.

Part 2: Discovery | 4 weeks (February)

This team-based project focuses on testing a project idea against the world. Design, iteration, prototyping, and project validation are emphasized.

Part 3: Execution | 8 weeks (March and April)

Teams identify an innovation opportunity and carry through a full project cycle consisting of ideation, discovery, and manifesting a high-fidelity version of the project.

All phases include presentation, critique, reflection and documentation activities.

Learning Outcomes

Upon completion of the course students are expected to demonstrate knowledge, skills, and abilities in the following areas:

- Brainstorming and ideation skills
- Identifying innovation opportunities
- Discovery skills: creating, refining, and altering solutions to fit the real world and offer a unique value
- Execution skills: project management, time management, materials acquisition, knowledge acquisition, creating high fidelity prototypes
- The ability to successfully collaborate with team members, particularly across disciplines
- The ability to represent and communicate ideas
- Documentation skills
- The ability to thoughtfully reflect on their work and the work of others.

Grading

Class participation, including reflection essays	10%
Part 1 assignments	20%, in total
Part 2 project	30%
Part 3 project	40%

Attendance will also factor into your final grade. See below.

All assignments are due at the beginning of class. There is a letter grade drop for each day an assignment is late.

Grading criteria: Each phase of the course (ideas, discovery, and execution) will have its own intrinsic criteria related to its emphasis.

Materials

Journal/ Notebook
Project materials as needed

Course Texts

Readings will be distributed to the class. There is no textbook to purchase.

The Fine Print

Attendance: You are expected to attend every class and arrive on time. This is a hands-on course and every class meeting is important. You will not be able to simply copy notes from another student to make up for your absence. We will be doing in-class exercises on a new topic each class meeting. We will be taking attendance at the beginning of each class. Here are the rules:

- You are allowed two unexcused absences over the course of the semester. Upon the third absence, your final grade will be lowered one letter, with each three absences following continuing to lower the grade one letter. Each tardy counts as 1/3 of an absence.

- If you are ill and you don't want your absence to be counted, you must obtain a note from the attending doctor certifying that you are unfit to come to class.
- If you face a true emergency related to yourself or your immediate family, you may be excused at the discretion of the instructor.
- If you are traveling on Georgia Tech related business, email the instructor *before* the dates of travel. Such travel includes athletic department travel and out-of-town travel to job interviews. Athletes must *hand an instructor* a semester schedule in class before travel begins. Do not only have a schedule sent to a departmental mailbox. I will be strict with restricting excused absences for athletes to only those dates and times which are excused on the schedule.

These stipulations apply to all students, even students who must travel a distance on the highway to get to class. If there is a possibility of heavy traffic, plan to arrive early.

Participation: This is an active learning class. Participation is expected in class and in team meetings. Class participation necessitates a demonstration of independence, initiative, and time management. Participation and attendance will be noted throughout the semester.

Deadlines are set by the instructors and are non-negotiable. Late work will only be accepted under extenuating, documented circumstances.

Special needs accommodation: Any legitimate and documented special needs you may have throughout the course will be accommodated. Please contact an instructor and/or Georgia Tech's special needs services.