

# **ISyE 6341/6342 Capstone Project**

## **Master's of Science in Supply Chain Engineering Capstone**

### **1 COURSE INFORMATION**

Instructor: Alan Erera (alan.erera@isye.gatech.edu)

Course Prefix and Number: ISYE 6341 A and ISYE 6342 A

Term: Summer 2026

### **2 COURSE DESCRIPTION**

The capstone project provides a professional practice experience for students for academic credit conducted under the supervision of a Georgia Tech faculty advisor. The capstone project will be in the area of supply chain engineering, an application of the principles of industrial engineering, operations research, and data analytics to a design or planning problem faced today by an organization in this field. The capstone project course sequence provides an opportunity to apply ideas from the classroom on an important project of interest to a business, government agency, or other organization.

### **3 COURSE LEARNING OUTCOMES**

By enrolling in this course, students will learn how to:

1. properly define and scope a supply chain engineering project;
2. apply appropriate engineering methodologies and analytical tools; and
3. improve skills in
  - proposal writing,
  - technical report writing,
  - public speaking, and
  - project management.

### **4 REQUIRED COURSE MATERIALS**

No textbooks or materials are required.

## 5 GRADING POLICY

Grading for the course will be determined by your Capstone Project Faculty Advisor in conjunction with the Course Instructor. Your performance in the following areas will be used to determine your grade:

- Student Participation and Professionalism: 10%
- Proposal
  - Written Proposal: 15%
  - Oral Proposal: 10%
- Final Work Product
  - Work Quality: 25%
  - Written Final Report: 25%
  - Oral Final Report: 15%

When determining your grades for project components, your Advisor and the Instructor may additionally seek input from other individuals who participated in assisting you with the projects (*e.g.* company or organization representatives, etc.).

Individual students involved with a single project need not all receive the same final grade.

## 6 PROJECT REQUIREMENTS

A successful capstone project must meet the following two primary requirements:

- *Methodology.* The project must require the use of *significant* supply chain engineering tools and methods. You have armed yourself with a toolkit for conducting quantitative analysis of supply chain problems, and your goal in this project is to deploy tools in the study of a real-world problem or question.
- *Value.* Each team member is expected to spend a minimum of 200 productive hours on the project, including time developing reports and delivering oral presentations. The scope of the proposed project, and the value of the project delivered to your client, should be consistent with this expectation.

Most of our capstone projects will address problems that arise within a specific organization, and it is quite likely that your project will have a *Sponsoring Organization*. In fact, many students may wish to identify a sponsoring organization for your project on their own. In case students are working with data or ideas from a sponsoring organization that should not be disclosed to the public, Georgia Tech can sign a non-disclosure agreement that limits our rights to share data deemed confidential. It is important to understand, however, that the Capstone Project is part of the MS SCE curriculum, and that some project details will necessarily need to be disclosed to the faculty team in order for students to be graded and receive course credit.

## 7 ORGANIZATION

There are two types of capstone projects:

1. *Small Team Projects (2-3 students)*
2. *Individual Internship Projects*

**Each student team or individual internship project will be advised by a Georgia Tech faculty member.** Faculty advisors will be the primary day-to-day contact persons for students regarding questions and advice for the projects. You are responsible for finding an advisor from our MS SCE faculty group; other faculty members in ISyE may also be selected but require approval by the Course Instructor. You are responsible for scheduling meetings with your advisor to update them on your progress, and to discuss your ideas.

For those wishing to pursue option 2, it is necessary for you to find your own internship, and your employment may not violate your visa status. International students may be able to use CPT to conduct a Capstone Project internship but should check with the Course Instructor before contacting Georgia Tech's Office of International Education.

## 8 PROJECT PHASES AND REPORTS

The capstone project has three major phases:

- *Project Identification Phase.* During this phase, you will identify a project topic area and a sponsoring organization. You will form a group, if you intend to work on a group project. You will prepare a one-page Project Pre-proposal document and submit it for approval. This phase ends with your project topic area and group approved by the Course Instructor.
- *Project Definition Phase.* The problem to be solved or research question to be answered, deliverables, and project plan are defined. At the end of this phase, the written Proposal and oral Proposal Presentation spell out the work you plan to do and the proposed methods you will employ to deliver results.
- *Work Phase.* Data are collected and validated; analysis is conducted; and conclusions or recommendations are generated. At the end of the work phase, you will produce a written Final Report detailing your project, the methods used, and the results obtained. During the oral Final Report, your team will present your methods and findings.

### *Additional Guidelines for Presentations and Reports*

- Each team member should present a significant portion of one of the two required oral presentations. It is important for all students to practice this important skill.
- Oral reports should be 30 minutes in duration, with 5-10 minutes reserved for questions-and-answers with the audience.

- Written reports should be prepared in a clear and concise manner and should include an Executive Summary providing a brief synopsis of the project and its findings for managers. Students should use Appendices as appropriate to present details of methodologies utilized.

Electronic copies of the Pre-proposal, written Proposal and Final Report should be provided to your Faculty Advisor and also uploaded to the course Canvas (canvas.gatech.edu) site. Please also upload your presentation slides for the Oral Proposal Presentation and Final Oral Presentation.

*Project Sponsor Identification:* The first document you will turn in describes your plan for the Capstone Project, including a proposed industry sponsor (or a short list of potential sponsors), and group members if applicable.

*Project Pre-proposal:* The project pre-proposal document is a **one-page** document required for any student beginning a capstone project or internship. The document provides the name of the industry sponsor, the group members if applicable, the tentative title of the project, and 1-2 paragraphs that briefly describe the project to be conducted.

*Proposal:* The proposal is a detailed description of the project, including an executive summary. The proposal provides detail about the industry sponsor and the challenge your project addresses. It describes the problem thoroughly and proposes a set of activities that will be used to address the problem, including a description of the analytical approach. If the project includes a redesign, the proposal will also outline how to test the proposed new solution or solutions. Written proposal documents are usually in the 8-10 page range.

The Proposal Oral Presentation should be scheduled no later than the deadline listed above and should be delivered to the team's faculty advisor and at least one other faculty advisor listed below. Other interested individuals (for example, industry or agency representatives) can also attend the proposal.

*Final Report:* The final report is the major deliverable of every Capstone Project and must thoroughly cover the findings of the project. An executive summary is required. The final report describes the challenge, describes the approaches used to address the challenge, reports the findings and their potential and/or measured impact. Final reports often range from 20-50 pages, including appendices that describe technical details of analyses.

The Final Oral Report will be given during **Capstone Project Day**. Everyone is expected to be available in Atlanta or remotely by video conference for the entire day. Each individual or team will present results during the event.

## 9 ATTENDANCE POLICY

This course does not include scheduled class meetings except for Capstone Project Day. Students conduct independent work under the supervision of a Faculty Advisor. The frequency and format of student– advisor contact are determined by mutual agreement.

## **10 HONOR CODE**

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. Review the Student Code of Conduct and the Academic Honor Code, especially Appendix A: Graduate Addendum to the Academic Honor Code.

## **11 ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES**

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.