

## **ISYE 3044 Syllabus**

Simulation Analysis and Design, 3 Credits

Summer 2026

### **Instructor Information**

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**Instructor: Jaime Gonzalez-Hodar**

**Email: [jhodar3@gatech.edu](mailto:jhodar3@gatech.edu)**

### **General Course Information**

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#### **Schedule**

Class meetings: Tuesday, Thursday 9:30 – 11:40 am, Instructor Center (IC) 205

Office hours (also by appointment): Wednesday 10:00 – 11:00 am

#### **Description**

Discrete event simulation methodology emphasizing the statistical basis for simulation modeling and analysis. Overview of computer languages and simulation design applied to various industrial situations.

#### **Course Learning Outcomes**

Upon completing this course, the students will be able to

- Fit input distributions from data collected from the target system to be simulated
- Create a simulation model that serves the analysis objectives from the problem description and validate it
- Statistically analyze the simulated system from the simulation outputs
- Compare multiple policies/system designs/alternatives based on simulation and draw statistically meaningful conclusions on optimality
- Draw engineering/business insights from simulation studies to support decision-making under stochasticity

### **Required Course Materials (not required but recommended)**

Banks, J., Carson, J. S., Nelson, B. L., and Nicol, D. M., Discrete-Event System Simulation, 5th edition, Prentice-Hall, 2010.

### **Grading Policy:**

- Quizzes, 40%
- Project, 30%
- Homeworks, 30%

Grading scale will be [90-100] = A, [80-90) = B, [70-80) = C, [60-70) = D, and <60 = F. If you score in the appropriate range, you are guaranteed at least that grade.

### **Description of Graded Components**

The quizzes and all assignments are take-home.

## **Course Policies**

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### **Attendance and/or Participation**

Attendance to class is encouraged but not required.

### **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. Review [Georgia Tech's Honor Code](#) and the student [Code of Conduct](#).

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

### **Core IMPACTS**

[Core IMPACTS](#) is the University System of Georgia's General Education curriculum. If you are teaching a course that counts towards Core IMPACTS, you should include a syllabus statement about the Core area and associated [career competencies](#). [This resource](#) developed by the Center for Excellence in Teaching and Learning and Online Education at Georgia State University includes template syllabus statements for each of the Core IMPACTS areas that you may adapt for your course.

### **Accommodations for Students with Disabilities**

If you are a student with learning needs that require special accommodation, [contact the Office of Disability Services](#) (404-894-2563) 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.

### **Student-Faculty Expectations Agreement**

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. [The Student-Faculty Expectations](#) articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

### **Pre- &/or Co-Requisites**

ISYE2027 (Probability with Applications), ISYE2028 (Basic Statistical Models) and ISYE3232 (Stochastic Manufacturing and Service Systems). You also must understand the basic foundations of programming.

### **Collaboration, Group Work, and Use of Generative AI**

Generative Artificial Intelligence (AI) has changed the world today and for the future. They are great tools for learning but could also be used for taking shortcuts without true learning. In a short survey, 47 ISyE students responded that AI tools had helped them understand better and faster and complete submissions more quickly. As a student, you are here to learn, to improve your critical thinking and cognitive capabilities, and to internalize the knowledge for your career for the long term.

In this class, you are welcome to use any tools you can find helpful for your learning. However, the objective should be to improve your critical thinking, cognitive capabilities, and internalized knowledge. If you used AI tools in the work you submit, you must give credit to the source and report how it helped you. And keep in mind that the resource will not be permitted on the quizzes.

You are allowed (and encouraged) to work in groups on all homework, but any work you turn in must be written in your own hand. No collaboration is allowed during quizzes.

### **Extensions, Late Assignments, & Re-Scheduled/Missed Exams**

Late work will not be accepted. However, I am amending this: one (1) homework will be accepted late if submitted within 24 hours of the due date.

If you cannot take the quiz on the scheduled dates for GT approved reasons, you should inform me at least a week before the exam; otherwise, no accommodation will be made. In case of emergency, you should contact the Dean of Students immediately. With the confirmation from the Dean of Student, we will discuss your options.

### **Regrade Request of Assignments**

If you feel that an error has been made in grading your assignment, you may request a regrade. All regrade requests should be communicated to me by email outlining the potential error **within one week** of it being returned. This timetable will be strictly adhered to. The TAs are not going to accept the regrade request.

## **Campus Resources for Students**

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### **Student Well-Being:**

At Georgia Tech, we are concerned about your overall physical, social, and mental well-being. A [comprehensive list](#) of wellness related resources has been compiled and maintained by the Office of the Vice President for Student Engagement and Well-being ([student-resource-guide \(gatech.edu\)](#))

In addition, the [Counseling Center](#), Stamps Health Services, and the Dean of Students Office will offer both in-person and virtual appointments. Student Center services and operations are available on the [Student Center](#) website. For more information on these and other student services, contact the Dean of Students or the [Division of Student Life](#).