DEPARTMENT OF MANAGEMENT
COLLEGE OF BUSINESS, ILLINOIS STATE UNIVERSITY

MGT 335: Fall 2026

College of Business Mission: Through our shared commitment to excellence in teaching, research, and service, we prepare students to be skilled and ethical business professionals who will make significant positive contributions to organizations, to communities, and to our larger society.

Vision: The first choice for business education in Illinois.

Academic Integrity: Students enrolled in College of Business classes are expected to maintain high standards of ethical conduct within the classroom and when completing assignments, projects, and/or exams. Plagiarism and other forms of academic dishonesty, such as cheating, will not be tolerated. Students are expected to provide appropriate citations for non-original writing, even if the original work is paraphrased. Penalties for plagiarism and other forms of academic dishonesty may be severe.

Professional Standards: All students in this course are expected to be familiar with the "College of Business Standards of Professional Behavior and Ethical Conduct". Additionally, all cell phones and other electronic devices must be turned off.

Full Denial to record course materials:

Students may not photograph or use audio or video devices to record classroom lectures, discussions, or visual materials that accompany them (e.g., lecture slides, whiteboard notes/equations). They (website materials) may not be reproduced or shared in any way (including electronically or by posting in any web environment) with those not in the class in that semester. Students with disabilities who need to record classroom lectures or discussions must contact Student Access and Accommodation Services to register, request, and be approved for an accommodation. Students who violate this policy may be subject to both legal sanctions for copyright law violations and disciplinary action under the University's Code of Student Conduct.

COURSE INFORMATION

Instructor: Dr. A. Choudhury

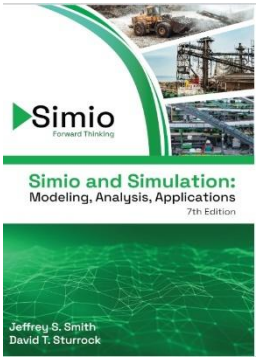
Course Number & Title: MGT 335 – **Operations Analytics**

Prerequisites: MGT 227 and MGT 100. Students must have met the prerequisites in order to remain in the class.

Credit Hours: 3 hours

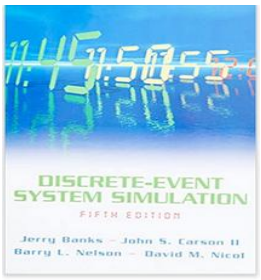
Location and Time:

SFHB 22G**:** Sec. 1 -- MW: 12:35 – 1:50 p.m.
SFHB 22G**:** Sec. 2 -- MW: 2:00 – 3:15 p.m.
SFHB 22G**:** Sec. 3 -- MW: 5:00 – 6:15 p.m.



INSTRUCTOR INFORMATION

Office Location: SFHB 218
My office hours: MW: 3:30–4:30 pm, or by appointment.
Contact Information: E-mail: choudhury@ilstu.edu



Text materials:

1. *Simio and Simulation: Modeling, Analysis, Applications.* 7th ed (SASMAA). Smith, J.S., and D. T. Sturrock. 2025. Simio LLC.

2. Discrete-Event System Simulation. 5th ed (DESS). Banks, J., J.S. Carson, B.L. Nelson, and D.M. Nicol. 2010. Prentice-Hall.

Software: Excel, Kumu, StatFit, and **Simio** (only works on Windows OS). Use a **USB memory stick** to save work.

Course Description: This course explores operations analytics through the application of discrete-event simulation to quality operations in business. Students will learn foundational simulation concepts and apply them using both spreadsheets and industry-grade software, **Simio**. Key topics include simulation modeling, queueing systems, model validation, probability distributions, input/output analysis (including goodness-of-fit tests), animation, risk analysis, and project management skills. The course provides hands-on experience with the Simio simulation platform and Excel-based modeling, culminating in a practical simulation project.

Course Objectives:

- Understand the fundamental concepts of simulation modeling and its underlying principles.
- Gain practical experience in input data modeling, output analysis, and managing various aspects of simulation projects.
- Develop a virtual business operations model using the Simio simulation software.
- Explore diverse applications of simulation in business operations and identify the critical factors for successful simulation projects.

Learning Outcomes: At the completion of this course, students will be able to:

1. **Explain and demonstrate** the role of simulation in quality management and its contribution to the success of service and manufacturing organizations.
2. **Compare and evaluate** alternative operational scenarios through simulation experiments to assess performance quality.
3. **Design and construct** simulation models for various business operations and **discuss** their practical applications.
4. **Apply** simulation techniques to analyze the impact of operational decisions on organizational performance.
5. **Estimate** product demand using appropriate simulation models for planning and inventory management, and **recommend** solution alternatives.
6. **Develop and solve** inventory models in a simulated environment to minimize costs and maximize efficiency.
7. **Optimize** resource allocation (capacity) in a simulated environment to improve process efficiency, minimize costs, and propose competitive strategies.
8. **Apply** Monte Carlo simulation for capacity planning to enhance operational efficiency.
9. **Construct** job sequencing models to identify the most profitable operational process.

How to Succeed in This Course: This course is designed to help you connect theory with real-world problem-solving. We will learn key concepts together and reinforce them through practical, hands-on exercises. Your active participation and regular practice are essential for mastering the material and achieving success.

Tips for Success:

- **Stay engaged:** Read the textbook and class materials regularly to keep concepts fresh.
- **Practice often:** Work through example problems and tackle all assigned exercises—this is where real understanding happens.
- **Use your resources:** The syllabus and course materials are your roadmap. Follow them closely, and don't hesitate to revisit topics as needed.
- **Build confidence through repetition:** The more you practice, the more intuitive these methods will become.

Success Mindset:

- **Be curious:** Treat each problem as an opportunity to learn, not just a task to complete.
- **Ask questions:** If something isn't clear, speak up in class or reach out during office hours—questions drive deeper understanding.
- **Collaborate:** Discuss ideas with classmates; explaining concepts to others is the best way to master them.
- **Stay positive:** Mistakes are part of the learning process. Every challenge you overcome builds your confidence. With steady effort and the right mindset, you'll not only master simulation and operations analytics but also gain skills that set you apart in the business world.

ASSESSMENTS:

Quiz/HW/Test		Points
Quiz (In-Class)		9 x 6 = 54 ± points
HW		9 x 20 = 180 points
Exam-I		100 points
Exam-II		100 points
Project		100 points
Total		534 ± points

Quizzes, Homework, & Tests: Please pay close attention to all due dates and times, as deadlines are firm. In exceptional circumstances, late submissions may be considered with a penalty ranging from 20% to 70%, depending on the situation.

Make-Up Policy: Make-up opportunities are not available for quizzes or homework. For exams, if you are unable to attend due to unavoidable circumstances — primarily medical emergencies — please notify the instructor as soon as possible and submit supporting documentation within one week. Acceptable documentation includes a signed physician's letter with contact information for verification. Please note that travel-related documents (e.g., plane or cruise tickets) are not considered valid.

If documentation is not received within one week, a grade of zero will be recorded. When valid documentation is provided, the instructor will determine the appropriate make-up arrangement, typically scheduled toward the end of the semester. Please be aware that make-up exams may differ in format and content from the original.

In-Class Quizzes: Approximately nine (9) closed-book, closed-notes quizzes will be given throughout the semester. Attendance is required to complete each quiz. To provide some flexibility for unforeseen circumstances, your lowest quiz score will be dropped at the end of the semester.

Other Policies: You are responsible for all information presented in the class and course websites. Q*uizzes* and *exams* should be completed individually.

Attendance Policy: Regular attendance is strongly encouraged and contributes directly to your success in this course. Before enrolling, please ensure there are no scheduling conflicts with class meeting times. Excessive absences may result in removal from collaborative group work, requiring independent completion of assignments and projects.

Out of respect for your peers and the learning environment, please arrive on time and remain for the full class session. Arriving late or leaving early is disruptive and reflects poorly on professional conduct. Attendance will be taken at every class meeting.

Incomplete Grade: A request for a grade of "I" (incomplete) will be granted only if unavoidable circumstances beyond the student's control prevent him/her from completing the course on schedule and the student has achieved an average grade of "C" or better on all exams scheduled prior to the time (which should be immediately before the end of the semester) of the request. The student should consult the ISU catalog for conditions related to the grade "I." Students are expected to be familiar with the University's **Withdrawal policy;** see Academic Policies and Practices.

Student Access and Accommodation Services:
Any student needing to arrange a reasonable accommodation for a documented disability and/or medical/mental health condition should contact Student Access and Accommodation Services at 350 Fell Hall, (309) 438-5853, or visit the website at StudentAccess.IllinoisState.edu.

Academic integrity: Academic integrity is the foundation of a meaningful and successful educational experience. It is a shared responsibility between students and faculty, built on trust, honesty, and accountability. Upholding integrity involves adhering to ethical standards in all academic work, ensuring that learning reflects genuine effort and dedication.

E-mail Policy: I will respond to e-mails at choudhury@ilstu.edu once a day (during weekdays) in the late afternoon. Make sure to provide your **name** and **subject: MGT335 Sec No.** (your sec. number) to receive priority. Please maintain professional behavior in communications. **Do not use Canvas's 'inbox.'**

Week	Topics	Test/HW open	MGT 335: Study Topics - MW	HW closes
			MODULE 1	
1,2	Topic 1	Aug. 17,19,24	Introduction to Simulation [Chap-1 SASMAA, Chap-1_DESS]	
		Aug. 17 at 11 am	**Hw1**	**Aug. 25 at 11 pm**
2,3	Topic 2	Aug. 26,31	Approaches to Simulation [Chap-3_SASMAA, Chap-1_DESS]	
		Aug. 26 at 11 am	**Hw2**	**Sep. 1 at 11 pm**
4		Sep. 7	**Labor Day Holiday**	**No Classes**
3,4,5	Topic 3	Sep. 2,9,14,16 Sep. 16	Basics of Queueing Models [Chap-2 SASMAA, Chap-6_DESS] Discussing the initial project concept	
		Sep. 2 at 11 am	**Hw3**	**Sep. 17 at 11 pm**
6	KUMU	Sep. 21	KUMU for Systems Thinking [project related]	
		Sep. 21 at 11 am	**Project proposal file submission**	***Sep. 22 at 11 pm***
6,7	Topic 4	Sep. 23, 28	Basics of Simulation –Spreadsheet Simulation [Chap-3_SASMAA, Chap-2_DESS]	
		Sep. 23 at 11 am	**Hw4**	**Sep. 29 at 11 pm**
7		**Sep. 30**	**Midterm-1 [Topics: 1-4]**	
			MODULE 2	
8,9	Topic 5 Model 1	Oct. 5,7,12 Oct. 7	Introduction to Simio Models [Chap-4 SASMAA] Discuss the **first Simio model** by Group [Project]	
		Oct. 5 at 11 am	**Hw5**	**Oct. 13 at 11 pm**
9,10	Topic 6	Oct. 14, 19	Statistical Models in Simulation [Chap-5 DESS]	
		Oct. 14 at 11 am	**Hw6**	**Oct. 20 at 11 pm**
10,11	Topic 7 Model 2	Oct. 21,26,28 Oct. 28	Application of Simio Models Discuss the revised Simio model [Project]	
		Oct. 21 at 11 am	**Hw7**	**Oct. 29 at 11 pm**
12,13	Topic 8	Nov. 2,4,9	Intermediate Modeling with Simio [Chap-5 SASMAA]	
		Nov. 2 at 11 am	**Hw8**	**Nov. 10 at 11 pm**
13,14	Topic 9	Nov. 11, 16	Distributions, Input Analysis–Goodness of Fit test [Chap-6_SASMAA; Chap-9_DESS]	
		Nov. 11 at 11 am	**Hw9**	**Nov. 17 at 11 pm**
14		**Nov. 18**	**Midterm-2 [Topics: 5-9] ***	
15		**Nov. 23, 25**	**Thanksgiving Break**	**No Classes**
			Final Project files submission due	**Nov. 29 (Sunday) 1 pm**
16		**Nov. 30, Dec. 2**	**Project presentations**	

* Students should be responsible for understanding and calculating procedures from previous topics. Brown dates are in-class quizzes dates. Please adhere to the **due date & time for quizzes, homework, and exams**; **no extension is** allowed.