

IE 682 – Quality of Care and Patient Safety Fall 2022

Class Times: M W F 10:00-10:50am

Room: Sackett 103

Instructor: Dr. Jason J. Saleem

Office: J.B. Speed, Room 306

E-mail: jason.saleem@louisville.edu

Office Hours: Mon, Wed 2:00-3:30pm

Or by appointment

Website: hosted on Blackboard

GTA: TBD

Office: TBD

Email: TBD

Office Hours: by appointment

Course Description: This course provides students an overview of the healthcare system and the different types of healthcare delivery, as well as factors that determine quality of care. This course also exposes students to tenets of patient safety from a human factors engineering perspective. Students will learn models of patient safety and incident analysis tools, including Root Cause Analysis (RCA) and Healthcare Failure Mode and Effects Analysis (HFMEA).

Optional Textbook (not required):

Carayon, P. (2016). *Handbook of Human Factors and Ergonomics in Health Care and Patient Safety* (2nd edition). CRC press.

Technology Requirements: A mobile computer (laptop or tablet) computer is required for this course – you will need it for some of the exercises. No special software is required beyond Microsoft Office (Word, Excel, PowerPoint).

Course Readings: There is no required textbook. Course materials will be based on selected scholarly articles and handouts. Readings are selected at the start of the semester from healthcare and human factors engineering scholarly works and related literature. For each week, one or more readings are assigned and posted on Blackboard. ***Students are expected to complete the readings and come prepared to discuss them.***

Student Learning Objectives: By the end of this course you will be able to:

- Demonstrate comprehension of the healthcare system components and unique quality and patient safety issues for each delivery system.
- Conduct a Root-cause analysis (RCA) for patient safety incidents
- Conduct a Healthcare Failure Mode and Effects Analysis (HFMEA) for specific healthcare scenarios and processes
- Recognize effective checklist design in healthcare
- Understand the complexity of handoffs and transitions of care
- Conduct an applied project involving the application of quality and/or patient safety methods (e.g., RCA, HFMEA).

- Write a comprehensive report based on the project that includes recommendations for process improvement and/or enhanced patient safety.

Course Activities:

1. Weekly readings. For each topic, 1-3 readings are selected by the faculty instructor. Unannounced quizzes may be administered to check whether the readings were understood.
2. In-class discussions. These are facilitated discussions between students and instructor in which participants discuss the content of readings, connect readings to prior readings and class activities, apply the readings to human factors engineering topics, identify strengths and weaknesses of assigned readings and the theories or methods they describe, identify opportunities for answering additional research questions or solving problems, and engage other relevant concepts, findings, or works from various disciplines.
3. Weekly assignments. Most weeks, there is an assignment due. These assignments will be posted on Blackboard.
4. Class projects and papers. Students will conduct an applied project involving the application of quality and/or patient safety methods (e.g., RCA, HFMEA) and write a comprehensive report based on the project that includes recommendations for process improvement and/or enhanced patient safety. Students will present their completed projects at the end of the course. Guidelines and expectations for the project, report, and presentation will be posted on Blackboard and fully discussed in class.
Team member evaluations. The instructor may ask each team member to submit a confidential Team Member Evaluation Form via Blackboard to report the relative effort/contribution of each person on the project team. In this case, the ratings on these forms will be used as weightings to convert team project grades into individual student project grades.
5. Additional assignments. IE 682 has an additional graduate-level assignment(s). You will perform an additional assignment(s) related to one or more of the course topics. Specific guidelines for this assignment(s) will be posted on Blackboard and discussed fully in class.

Course Topics

- Introduction to the class
- Healthcare system overview (types of delivery)
- Primary care, ambulatory care
- Emergency department (ED), Intensive care unit (ICU)
- Surgery
- Pharmacy and medication safety

- Self-care, e-home care
- Understanding the basics of patient safety
- Human error, risk assessment, fault tree
- Root-cause analysis (RCA)
- Healthcare Failure Mode and Effects Analysis (HFMEA)
- Adaptive capacity and resilience
- Quality of care (clinician/patient satisfaction)
- Quality engineer
- Inclusivity (language, accessibility, underrepresented groups)
- Social factors, team, organizational and job design, safety culture
- Workflow, operations and scheduling, patient flow
- Checklist and infectious control
- Handoffs and transitions of care (safety culture in healthcare, interruptions, error recovery)
- Examination of social, regulatory, and economic factors unique to health care

Important Dates

Mon Aug 22: Classes start

Mon Sept 5: Labor Day (no class)

Mon Oct 3: Mid-term break (no class)

Mon Oct 10: Midterm Exam

Wed Nov 23: Thanksgiving break (no class)

Fri Nov 25: Thanksgiving break (no class)

Mon Dec 5: Last day of classes

Wed Dec 7: Final Exam (8:00-10:30am)

Course Policies

Exams: The mid-term exam may be moved forward or backward one class meeting.

Attendance: Due to the nature of this course, you are expected to attend every class. Class attendance will be taken during the semester. Multiple absences will be penalized.

Participation in class discussions: You are expected to participate in the discussions. While I understand that you may not have something meaningful to contribute to particular discussions, a complete lack of participation in any of the discussions will be penalized.

Course readings: For each topic, 1-3 readings are assigned. Students are expected to complete the readings and come prepared to discuss them. Unannounced quizzes may be administered to check whether the readings were understood.

Make-up Policy: Make-up exams are available if you have to miss a class for a *valid* reason. However, make-up exams must be requested and taken within two class periods of the original exam. The exam you take might not be the same as the original exam.

Unethical Behavior: Any student caught cheating or plagiarizing on the paper or exams will be dealt with according to Speed School of Engineering policy. Cheating and plagiarism are unpleasant situations for all of us, so please avoid unethical behavior.

Accommodations: Any student requiring special accommodations to facilitate learning and class participation should see me during the first week of class, or as soon as possible thereafter.

Computer Issues and IT Support: Speed IT staff are available by appointment from 9 am to 4 pm to assist you with your technology needs. You may schedule an appointment by sending a detailed email including any relevant error codes and screen snips at SPDHelp@Louisville.edu (preferred) or 502-852-7620.

Final Grade: Your final grade will be calculated from five scores, each worth 1/5 of your final grade: (1) Overall score for homework assignments, unannounced quizzes, attendance, and participation in discussions, (2) Midterm exam, (3) Semester project and paper + presentation, (4) Final exam, and (5) An additional graduate-level assignment(s) on one or more of the course topics.

Grades will be calculated on a 100-point scale with conversion to decimal grades based on the official University grading system. +/- letter grades will be used:

97-100	A+	77-79	C+
94-96	A	74-76	C
90-93	A-	70-73	C-
87-89	B+	67-69	D+
84-86	B	64-66	D
80-83	B-	60-63	D-
		<60	F

Coronavirus Precautions

As a Community of Care, all Cardinals are expected to abide by public health guidelines and regulations as published by the University. While masks are currently not mandated, they are ***strongly encouraged*** when indoors (including classrooms, shared office spaces, etc.), while Jefferson County is in “red level” (high risk) status based on CDC criteria.

Please note, in the event that the public health status changes, the University may reinstitute required masking, or otherwise alter their COVID policies. Students, Faculty, and Staff are expected to abide by any such requirements in the event they are implemented. As a Community of Care, please be courteous to others, whether or not they decide to wear a mask.

Faculty have the responsibility to help students meet these recommendations by allowing students absent for reason of illness and/or quarantine to make up missed work and not penalize students for these absences. Faculty may require documentation.

In the event the instructor becomes ill, he/she will send a notification via Blackboard prior to the subsequent class meeting to provide further instructions. Depending on the type of illness, class may be moved to a remote format (temporarily), may be run by a Graduate Teaching Assistant, or may be canceled. Please be sure to check your University email account regularly in case issues such as this arise. UofL will post updates to policies, FAQs, and other COVID information [here](#).

Updated COVID-19 Status for the Jefferson County area can be found [here](#).

Title IX/Clery Act Notification

Sexual misconduct (including sexual harassment, sexual assault, and any other nonconsensual behavior of a sexual nature) and sex discrimination violate University policies. Students experiencing such behavior may obtain **confidential** support from the PEACC Program (852-2663), Counseling Center (852-6585), and Campus Health Services (852-6479). To report sexual misconduct or sex discrimination, contact the Dean of Students (852-5787) or University of Louisville Police (852-6111).

Disclosure to University faculty or instructors of sexual misconduct, domestic violence, dating violence, or sex discrimination occurring on campus, in a University-sponsored program, or involving a campus visitor or University student or employee (whether current or former) is **not confidential** under Title IX. Faculty and instructors must forward such reports, including names and circumstances, to the University's Title IX officer.

For more information, see the [Sexual Misconduct Resource Guide](#).