

CHBE 4515 Syllabus

Chemical Process Safety, Section A, 1 credit hour

Fall 2026

Instructor Information

Instructor: Sankar Nair

General Course Information

Description

Fundamental sources of chemical hazards and degree of risk. Process design and hazard avoidance are used to reduce risk.

Course Learning Outcomes

By the end of this course, a student should be able to:

- 1) Evaluate the effects of toxicants and other hazards.
- 2) Quantitatively analyze the sources, release, and dispersion of potentially hazardous or toxic liquids and vapors.
- 3) Analyze fire and explosion hazards.
- 4) Carry out hazard identification and risk assessment, and understand the methods of accident investigation.
- 5) Understand the process safety deficiencies that led to major disasters presented in the case studies.
- 6) Understand how to integrate safety concepts and safety practice into chemical process design.

Required Course Materials

D. Cowl and J. Louvar, Chemical Process Safety: Fundamentals with Applications², 3rd Ed., Prentice-Hall, 2011.

Grading Policy:

In this course the following graded assessments and assignments are used to determine the course grade:

HWs (3)	35 points
Quizzes (6)	20 points
Attendance	10 points
Final Exam	35 points
Total	100 points

The letter grade cutoffs in this class are as follows. A: 85 and above, B: 75-84, C: 65-74, D: 55-64, F: 54 and below, based on the overall score above. These cutoff points will never be increased during the course.

Course Policies

Attendance and/or Participation

Your academic success will depend strongly on the level of engagement with the course material. Actively participating in all lectures and taking advantage of other learning opportunities offered (e.g. assignments, office hours) is critical for successful attainment of the learning outcomes. The Georgia Tech Catalog describes policies around “approved Institute activities” (e.g., field trips and athletic events) and accommodations around religious observances.

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](#).

Cases of suspected 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

Not applicable for this 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.