CSE435 Software Engineering Fall 2024
Homework 1

Due Wednesday, September 4, 2024
(submitted to D2L before class)

Given the recent CrowdStrike incident and its global impact, the importance of software engineering and rigorous software development (and maintenance) is highlighted.

This assignment focuses on the need for software engineering techniques and software development processes. You are asked to write a thoughtful 1 page (single-spaced, 11-point font, 1-inch margins) critique on the potential negative impacts when *ad hoc* software engineering techniques are used in the development of safety-critical, high-assurance applications.

After reading the Therac-25 paper, write a 1-page critique that addresses the following points. Use concrete examples to support your arguments.

1. Who was at fault for the Therac-25 accidents?

2. What could/should have been done differently to prevent such tragedies?

3. Describe the CrowdStrike incident, both the software engineering issues and its (global) impact.

4. Describe the similarities between Therac-25 incidents and the CrowdStrike case. Explain the similarities and differences, with respect to the technical aspects and how the cases were handled. What can be done to prevent future such accidents?

Your critique will be evaluated according to the following criteria:

- Have you presented a cohesive write up? (Do not submit short answers for each of the above points. The critique should be read as one document.)

- Have you addressed all of the technical points, using concrete examples to support your arguments?

- Does each paragraph have a thesis sentence with the paragraph body containing supporting text?

- Has the document been thoroughly proofread and typos eliminated?

- If you cite examples from the literature, be sure to include a citation in the body text and a bibliography section at the end of the write up (this information can float to the second page).