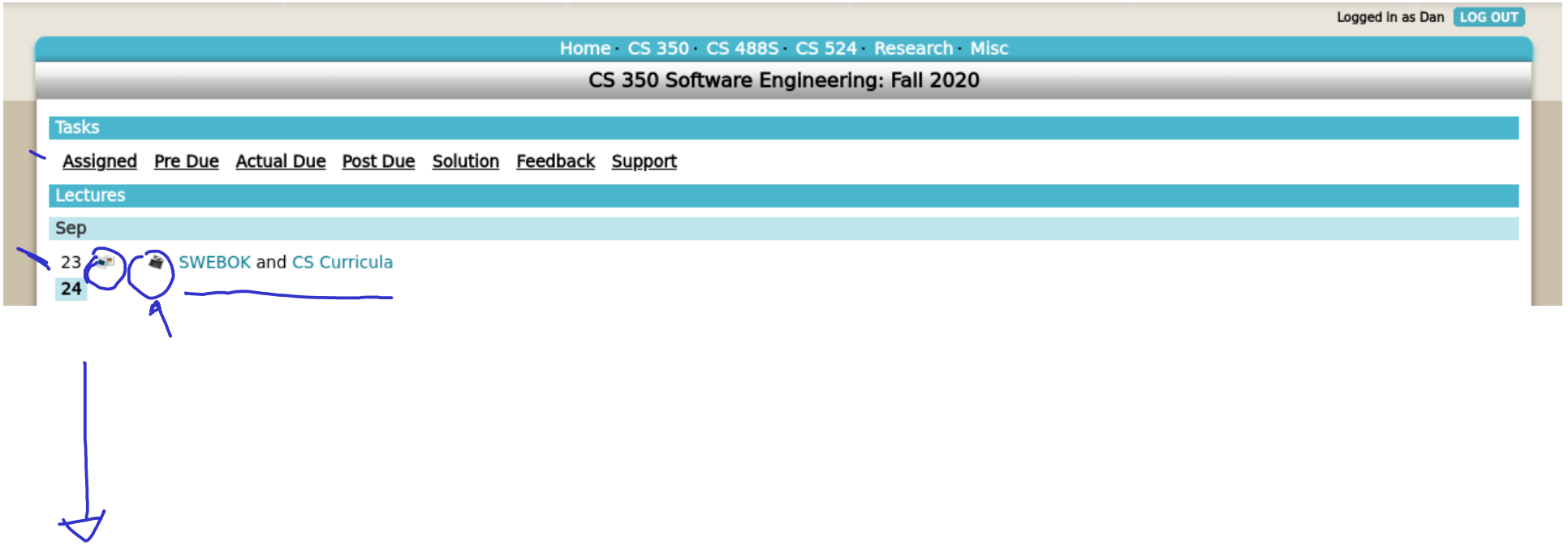
Plan for Today

- Software engineering intro
  - **identify** and **understand** cause of problems
  - **propose** and **implement** mitigating solutions
  - **measure** effectiveness
  - **refine** and **repeat**

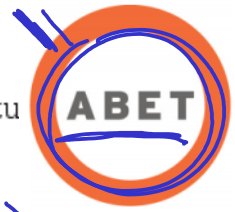
Lecture 2 – 24 September

Logistics

- Resources
  - everything at shelby.ewu.edu
    - slides with resources
    - video
    - tasks (download and submit)
    - syllabus
      - read yourself; you're responsible for its contents



Student Learning Outcomes



Accreditation Board for Engineering and Technology

According to the 2011-2012 ABET Criteria for Accrediting Computing Programs, "The program must enable stu graduation:

(a) An ability to apply knowledge of computing and mathematics appropriate to the discipline

(b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution

(c) An ability to design, implement, and evaluate a computer-based system, process, component, or program to me

(d) An ability to function effectively on teams to accomplish a common goal

(e) An understanding of professional, ethical, legal, security and social issues and responsibilities

(f) An ability to communicate effectively with a range of audiences

(g) An ability to analyze the local and global impact of computing on individuals, organizations, and society

(h) Recognition of the need for and an ability to engage in continuing professional development

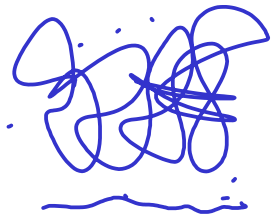
(i) An ability to use current techniques, skills, and tools necessary for computing practice.

(j) An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.

(k) An ability to apply design and development principles in the construction of software systems of varying complexity."

ABET accreditation:

- Assures prospective students that a program has received international recognition of its quality
- Promotes "best practices" in education
- Directly involves faculty and staff in self-assessment and continuous quality improvement processes
- Is based on "learning outcomes," rather than "teaching inputs."
- Ensures that graduates have met the educational requirements necessary to enter the profession
- Provides opportunities for the industry to guide the educational process to reflect current and future needs



WE CURRENTLY ACCREDIT 3,709 PROGRAMS AT 752 COLLEGES AND UNIVERSITIES IN 30 COUNTRIES.

EWU Professional Advisory Board

Our students will be prepared to…

1. grow their roles in the community and the organization that employs them.
2. pursue and apply lifelong learning, assessing the value of older, established, stable systems in relation to new systems, and working within legacy systems, not just create new solutions.
3. act on the recognition that all decisions have an impact on the organization, business partners, and customers, being cognizant of the end users—and whether it is improving their lives.
4. contribute with an understanding that there is more to a product than technology, and that product development is a collaborative and ongoing process.
5. collaborate across disciplines and with non- technical, as well as technical, people.
6. discuss customer needs at the customer's level, including through the process of gathering requirement specifications.
7. expand technical competence beyond the fundamentals in areas such as software and interface development, databases, concurrent systems, refactoring, design patterns, and systems integration.
8. create robust and testable software, with regard to architectural domain, security considerations, deployment, maintenance, validation, and verification.
9. act with cultural awareness and ethical integrity in a global community.

Workload

- Tasks
  - individual
    - conceptualization and grounding
    - software requirements specification
    - proof-of-concept component
      - v1.0…v1.*n*
  - team
    - project component 1
    - project component 2
    - project test report
    - project team evaluation
- No quizzes or tests