

CSE 201 D: INTRODUCTION TO SOFTWARE ENGINEERING

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TODAY'S AGENDA

- Syllabus
- Divide students into groups
- Let's get started ...

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LECTURES & COURSE INFO

- CSE 201 (D) - Intro to Software Engineering
- 3 Credit Hours
- Web-Based Curriculum – Online Synchronous
- We are planning to meet online, using Zoom, as follows:
 - Section D → TR 10:00 AM – 11:15 AM
 - <https://miamioh.zoom.us/j/83050549003?pwd=YkdxcEc5WEU4bWx6OUWRFUStJa0p0UT09>

INSTRUCTOR

- Dr. Hakam Alomari
- Office 201-B Benton Hall
- Phone 529-0356
- Website <http://www.users.miamioh.edu/alomarhw>
- Email alomarhw@miamioh.edu
- Office Hours Due to Covid-19, all office hours will be by appointments.
 - Zoom: <https://miamioh.zoom.us/j/5195424316>
 - WebEx: <https://miamioh.webex.com/meet/alomarhw>

TEACHING ASSISTANTS

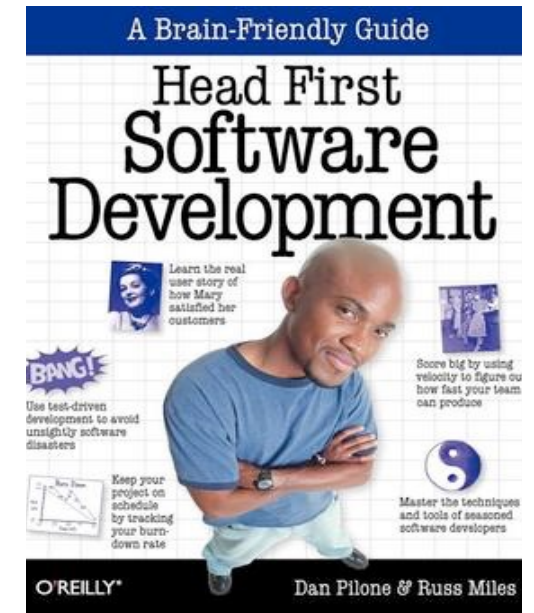
- Joe Rutkowski, rutkowjb@miamioh.edu
 - By appointment – virtual

PREREQUISITES

- CSE 274: Data Abstraction & Data Structures.

COURSE MATERIALS

- Head First Software Development
 - By: Dan Pilone, Russ Miles
 - Publisher: O'Reilly Media
 - Date: December 2007, 1st E.
 - ISBN: 0-596-52735-7



- The textbook is available through O'Reilly Books Online and Miami Proxy.
- SWEBOK V3.0.
 - You can download your version from the IEEE Computer Society.
- Other resources will be shared as the course progresses.

GRADING

■ Course Evaluation Components:

- *Project & its assignments:* 50% 250 points (out of 500)
- *Midterm Examination:* 20% 100 points (out of 500)
- *Final Examination:* 20% 100 points (out of 500)
- *Participations & Quizzes:* 10% 050 points (out of 500)

Scale:	0%	60%	63%	67%	70%	73%	77%	80%	83%	87%	90%	93%	97%
Points:	0	300	315	335	350	365	385	400	415	435	450	465	485
Grade:	F	D-	D	D+	C-	C	C+	B-	B	B+	A-	A	A+
GPA:	0.00	0.70	1.00	1.30	1.70	2.00	2.30	2.70	3.00	3.30	3.70	4.00	4.00

PROJECTS

- Large scale project
 - Multiple iterations, as in real-world projects
 - TA role play as customers
 - 50% of your grade!

ATTENDANCE

- Attendance is expected
- Students with two or fewer absences will receive 2% extra credit for the term
- Synchronous sessions in this course will be recorded.
- Attendance is recorded via Canvas.

CHEATING

- Zero-tolerance policy
- The second instance of academic dishonesty (campus-wide) results in a one-semester dismissal

LATE WORK

- Late assignments are not accepted
- Plan ahead

QUIZZES

- No make-ups!
- One quiz score dropped.

SYLLABUS FEEDBACK

- Take 10 minutes to go over the syllabus on Canvas
- Please do take this seriously as your feedback will help me appropriately
 - Pace the course and
 - Ensure a good educational experience for all students in the class.

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TEAMS

- 36 students in Section D
- 9 groups created randomly under Canvas
- Check your group and get in touch asap with your team members.

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LIST OF MAIN TOPICS

- Introduction to software engineering
- Introduction to software life-cycle phases and engineering processes
- Modeling with UML
- Requirements elicitation and specification
- Design concepts
- Implementation concepts and tools
- Testing concepts, activities, and management
- Management concepts

WHAT IS SE?

- You Go First ... What is Software Engineering?
- Systems and software engineering – Vocabulary
 - <https://ieeexplore.ieee.org/document/5733835/?tp=&arnumber=5733835>



SE – IN PLAIN ENGLISH

- Constructing large software systems or subsystems (in an organized fashion)
 - Following a process
 - Striving for goals
 - Correct
 - Maintainable
 - On time
 - Within budget

WHAT IS SE?

- Software Engineering
 - The application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software. [IEEE'93]

WHAT IS SE?

- Software Engineering
 - The application of a **systematic**, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software. [IEEE'93]
 - **Structured, unified, organizational, detailed, procedural**

WHAT IS SE?

- Software Engineering
 - The application of a systematic, **disciplined**, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software. [IEEE'93]
 - Focused, **controlled**, specialized, punished, rigorous, organized

WHAT IS SE?

- Software Engineering
 - The application of a systematic, disciplined, **quantifiable** approach to the development, operation, and maintenance of software; that is, the application of engineering to software. [IEEE'93]
- **Calculable, measurable**

WHAT IS SE?

- Software Engineering
 - The application of a systematic, disciplined, quantifiable approach to the **development**, operation, and maintenance of software; that is, the application of engineering to software. [IEEE'93]
- Creation, progress, growth, enhance, **create & enhance**

WHAT IS SE?

- Software Engineering
 - The application of a systematic, disciplined, quantifiable approach to the development, **operation**, and maintenance of software; that is, the application of engineering to software. [IEEE'93]
- **Process, use, run, exec**

WHAT IS SE?

- Software Engineering
 - The application of a systematic, disciplined, quantifiable approach to the development, operation, and **maintenance** of software; that is, the application of engineering to software. [IEEE'93]
- **Upkeep**

WHAT IS SE?

- Software Engineering
 - Our translation (not necessarily correct):
 - The application of a procedural, controlled, measurable approach to the creation/enhancement, running, and upkeep of software”

WHY SE?

- Build a doghouse:
 - Sketch plan
 - Buy supplies
 - Build it in a weekend



- Build a skyscraper:
 - Sketch plan
 - ???
 - Profit



dreamstime

SMALL VS LARGE

- Programming in the Small
 - individual program
 - single programmer
 - does one relatively simple task well
 - quickly completed



- Programming in the Large
 - multiple programs
 - team of programmers
 - divided into separate modules
 - may take months or years to complete



For more information: see the following:

- http://en.wikipedia.org/wiki/Programming_in_the_large_and_programming_in_the_small and
- <http://dl.acm.org/citation.cfm?id=808431>

SE KNOWLEDGE AREAS

- Requirements
- Design
- Construction
- Testing
- Maintenance
- Configuration management
- SE management
- SE process
- SE Tools & methods
- Software quality

SE AT MIAMI CSE

- CSE: Computer Science & **Software Engineering**
- Other CSE courses in the SE track:
 - **Requirements**
 - **Design**
 - QA/**Testing**
 - HCI
 - **Construction**

SWEBOK

- IEEE Guide to the Software Engineering Body of Knowledge (SWEBOK) V3.0.
 - You can download your version from the IEEE Computer Society.
 - <https://www.computer.org/education/bodies-of-knowledge/software-engineering>
 - I downloaded the 2014 version and put it on Canvas for you.