

Hullward University: Software Engineering Department

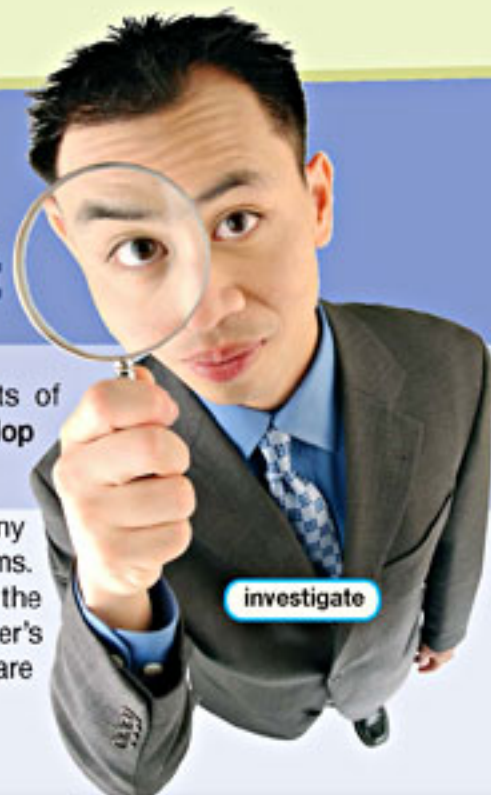
Software Engineering 101: Course Outcomes

This class focuses on computer **software**. It covers various elements of development and programming. The students will learn to **design** and **develop** programs. The objective is to **write** useful computer software.

Small groups of students will complete several short projects. These focus on **programming-in-the-small**. The whole class will work together on **programming-in-the-large**. This project runs throughout the entire semester.

The students will also **install** and **test** their own software **artifacts**. This is an

opportunity to **investigate** any software development problems. Finally, students will **evaluate** the correctness of each other's software. Student reviews are part of the final grade.



investigate



Get ready!

1 Before you read the passage, talk about these questions.

- 1 What are some steps in the process of creating software?
- 2 What are some responsibilities of a software engineer?

Reading

2 Read the course description. Then, choose the correct answers.

- 1 What is NOT included in the course?
 - A how to write software
 - B steps for investigating problems
 - C the history of software development
 - D testing other students' software
- 2 What will the students do for each other?
 - A adjust development plans
 - B recommend career paths
 - C install software
 - D evaluate performance
- 3 What is true of the programming-in-the-small project?
 - A It is the first step in writing a program.
 - B It involves small groups of students.
 - C It deals with the main framework of a program.
 - D It is used to install programs.

Vocabulary

3 Match the words (1-8) with the definitions (A-H).

- | | |
|------------------|--------------|
| 1 __ evaluate | 5 __ design |
| 2 __ software | 6 __ develop |
| 3 __ investigate | 7 __ install |
| 4 __ write | 8 __ test |

- A to form letters and words into sentences or instructions
- B to plan the way that something will be created
- C to bring something from initial conception to action or implementation
- D to carefully study something and assess its qualities
- E to operate something to see whether it works
- F to put something into the place where it will function
- G to get more information about something
- H the programs that perform particular functions on a computer

4 Choose the sentence that uses the underlined part correctly.

- 1 A Programming-in-the-small often creates less complex software.
- B Students must develop problems in order to repair the program.
- 2 A The teacher will install the software's performance.
- B Students are working on programming-in-the-large to create a program with many levels and functions.

5 Listen and read the course description again. What is the difference between programming-in-the-large and programming-in-the-small?

Listening

6 Listen to a conversation between a student and an instructor. Mark the following statements as true (T) or false (F).

- 1 __ The woman recommends programming-in-the-large.
- 2 __ The man enjoys investigating problems.
- 3 __ The man is nervous about working in groups.

7 Listen again and complete the conversation.

Student: Professor Wendell? I'm really interested in 1 _____ .
But is it a good career choice?

Instructor: I think so. You are a good leader. You'd enjoy 2 _____ .

Student: I agree. I like working in groups.

Instructor: You like to 3 _____ , right?

Student: Yes, I do. But software engineering seems like it could 4 _____ .

Instructor: It's sometimes challenging when others 5 _____ your work. But if you are patient, it is very rewarding.

Student: That 6 _____ something I can do.

Speaking

8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

*I'm interested in ... / You're a good ...
It can be ...*

Student A: You are a student. Talk to Student B about:

- a career in software engineering
- how it is rewarding
- how it is challenging

Student B: You are an instructor. Talk to Student A about a career in software engineering.

Writing

9 Use the conversation from Task 8 to complete a career advice webpages.

Is Software Engineering Right for You?

Rewards

- Engineers can _____ .
- The job comes with opportunities to _____ .

Challenges

- It can be hard to _____ .
- Engineers must _____ .

Get ready!

1 Before you read the passage, talk about these questions.

- 1 What kinds of computers are typical for personal use?
- 2 What kinds of computers are typical for business use?

Reading

2 Read the journal article. Then, choose the correct answers.

- 1 What is the main idea of the article?
 - A recommendations for computer purchases
 - B the challenges of today's software engineering industry
 - C the equipment that a computer company manufactures
 - D technology arising from advances in software development
- 2 According to the article, which of the following is NOT something that software engineers do?
 - A create programs for individual use on PCs
 - B develop complex software to run on government computing clusters
 - C connect many computers to large corporate servers
 - D increase the size of desktops for homes and businesses
- 3 What opinion does the article express about software engineering?
 - A It is expanding more quickly each year.
 - B It is responsible for improving many areas of people's lives.
 - C It is a good area in which to start a successful career.
 - D It is a subject that everyone should be educated about.

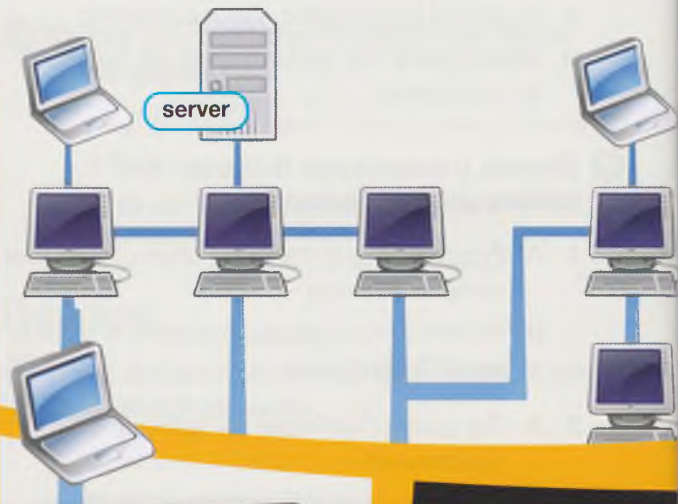
The Weekly Techie

LET'S FACE IT:
WE RELY ON SOFTWARE ENGINEERS

They create programs for our home **PCs**. They also develop advanced software for government **computing clusters**. They help us connect multiple **workstations** to massive corporate **servers**.

Home **computers** were a luxury just a short time ago. People felt lucky to have bulky **desktops** in homes and businesses. Now these computers are smaller and more powerful. Many people use **laptops** or **notebooks** instead. **Tablets** provide added mobility. And now people can install **embedded computers** just about anywhere.

This is all possible because of software engineers. The software development industry strives to make life easier. So from all of us at The Weekly Techie: thanks, software engineers!



Vocabulary

3 Match the words (1-5) with the definitions (A-E).

- 1 ___ PC 3 ___ laptop 5 ___ workstation
 2 ___ tablet 4 ___ desktop

- A a very small computer that typically does not have a keyboard
 B a hinged computer that is easy to transport
 C a computer that is intended for personal use
 D a powerful computer that processes advanced tasks
 E a computer that is intended for use in one location

4 Read the sentences and choose the correct words.

- The student carried a **desktop / notebook** to class every day.
- The company connected all of its computers to the same **PC / server**.
- Early **computers / laptops** were so large that they occupied entire rooms.
- A **tablet / computing cluster** is more powerful than most other types of computers.
- The company installed **embedded computers / workstations** in employees' cars.

5 Listen and read the journal article again. What is a benefit of using a tablet?

Listening

6 Listen to a conversation between two engineers. Mark the following statements as true (T) or false (F).

- ___ The woman finished developing a program for desktops.
- ___ The man recommends creating another application for laptops.
- ___ The woman plans to make the program work with a touch screen.

7 Listen again and complete the conversation.

- Engineer 1:** Hey, Grace. What are you **1** _____ ?
Engineer 2: I'm still developing the home banking application.
Engineer 1: Wait, didn't you **2** _____ already?
Engineer 2: Well, sort of. I finished a version for **3** _____ .
Engineer 1: So what are you doing now?
Engineer 2: Next, I'm going to create an application for **4** _____ .
Engineer 1: Oh, that's a good idea. **5** _____ carry tablets nowadays.
Engineer 2: Right. That's why **6** _____ needs to work well with a touch screen.

Speaking

8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

- Didn't you finish ...*
What are you doing ...
Next, I'm going to ...

Student A: You are an engineer. Talk to Student B about:

- a program that he or she is developing
- the types of computers that the program currently works on
- the types of computers that the program will work on

Student B: You are an engineer. Talk to Student A about a program that you are developing.

Writing

9 Use the conversation from Task 8 to complete the project extension request.

Brown & Steele Software Development:

Project Extension Request Form

Project:

Current Progress: So far, I developed the program for use on _____ .

Reason for Extension: I would like to develop the program for use on _____ because _____ .

An important feature of the new version will be _____ .