

Course Syllabus SE185: Problem Solving in Software Engineering Sections (1, 2, and 3)

Lecture Instructor

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Office Hours: Monday and Wednesday (11:00AM.-12:00PM), 307 Durham Center (or by appointment)
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Teaching Assistants

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TA Office Hours: Updated office hour will be available on **Canvas**.

Lectures

Monday, and Wednesday: 10:00 AM - 10:50 AM, HOOVER 1227

Labs

Unless stated otherwise there will be a **2-hour lab every week** other than THE first week. The instructions for each lab will be available on Canvas. Lab attendance is **MANDATORY**. You **MUST attend ALL labs** to receive a passing grade. Missing a lab with no prior excuse will result in 0 credit for the lab and subsequently, failing the course. The lab reports and demonstrations are due one week after your lab.

Since the seating capacity in the lab is limited, so please attend **ONLY** the section for which you are registered. **Switching sections is not allowed**. There are 3 lab sections mentioned below:

Section 1: Tuesday 10:00 AM - 11:50 AM (**COOVER 2042**)

Section 2: Tuesday 2:10 PM - 4:00 PM (**COOVER 2042**)

Section 3: Thursday 4:10 PM - 6:00 PM (**COOVER 2042**)

We will be using **Notepad++** and **Cygwin** on a Windows machine in the lab. If you have a Windows machine and want to install the software on your own personal machine, see the instructions on Canvas or ask your TAs.

Course Catalog Description and Prerequisite

Introduction to software engineering and computer programming. Systematic thinking process for problem solving in the context of software engineering. Group problem solving. Solving software engineering problems and presenting solutions through computer programs, written documents and oral presentations. Introduction to principles of programming, software design, and extensive practice in design, writing, running, debugging, and reasoning about programs. Only one of ENGR 160, ABE 160, AERE 160, CE 160, CHE 160, CPRE 185, EE 185, IE 148, ME 160, and SE 185 may count toward graduation.

Prerequisites: MATH 143 or satisfactory scores on mathematics placement examinations; credit or enrollment in MATH 165

Learning Outcomes

After successful completion of SE 185, students are expected to acquire the following skills:

- Design and write computer programs to solve Computer engineering problems.
- Use common features of programming languages such as functions, loops, arrays, other data structures to design and evaluate solutions for engineering problems.
- Work in small teams to develop solutions to engineering problems.
- Write technical reports detailing the goal, alternative solutions, best solution, evaluations of multiple solutions, and conclusion for a given engineering problem.

Learning Objectives

The purpose of this course is to introduce basic structures of programming such as data types, control flow, data structures, and storage as potential tools for solving and simulation of complex engineering problems. Labs will use programming and computational tools to complete computer engineering projects.

Software Engineering ABET outcomes

1. Ability to apply knowledge of mathematics, science, and engineering (A)
2. Ability to identify, formulate, and solve engineering problems (E)
3. Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice (K)

Required Textbooks

This course uses an electronic book published by Zante.

1. Follow the link below and sign up at zyBooks. **Please use your first name, last name exactly as in your student ID.**
zyBooks: <https://www.zybooks.com/>
2. Enter the zyBook code **IASTATESE185AhamedSpring2020**
3. Use ONLY your **iastate.edu** e-mail address to subscribe
4. Click Subscribe and Pay the cost of the book.
5. Select and Enroll in your **respective lab section** that you signed up for in accessplus.

Also available through ISU bookstore. To purchase this book from the ISU bookstore you can pick up one of the cards from the book shelves and take them to the register where they are activated. Then go to <http://www.isubookstore.com/redeem> to redeem the card using the 12-character code on the card. Once it redeems it brings up the actual url and info needed to access the zybook. The cards should say SE 185 on them.

If the book have any problem, **please contact support@zyante.com for support.** If you email me, I will just forward the email to Zyante. I do not have any control over the accounts for the books. Subscriptions are normally non-refundable. However, full or partial/prorated refunds may be available to students in some cases, such as when dropping a class. Contact info@zyante.com for more information. Additionally, renewal options are usually available if you have to retake the course.

Tentative Class Schedule: Updated schedule will be available on Canvas

Week	Day	Topics	ZyBook Readings Due Date	Homework Due Date	Lab	In-Class Activity
1	L01 Mon 1/13	Course Intro.		HW 0 Due Sun. 1/26 9 PM	No LAB	No Events
	L02 Wed 1/15	First C program	1/15 – 9:30 AM			
2	L03 Mon 1/20	Variables	1/20 – 9:30 AM	HW 1 Due Sun. 2/02 9 PM	LAB 01	Activity
	L04 Wed 1/22	Math Functions	1/232 9:30 AM			
3	L05 Mon 1/27	Char/Strings	1/27 – 9:30 AM	HW 2 Due Sun. 2/09 9 PM	LAB 02	Activity
	L06 Wed 1/29	Functions	1/29 – 9:30 AM			
4	L07 Mon 2/03	Branches	2/03 – 9:30 AM	HW 3 Due Sun. 2/16 9 PM	LAB 03	Activity
	C08 Wed 2/05	Branches	2/05 – 9:30 AM			
5	L09 Mon 2/10	Loops	2/10 – 9:30 AM	HW 4 Due Sun. 2/23 9 PM	LAB 04	Activity
	L10 Wed 2/12	Loops	2/12 – 9:30 AM			
6	L11 Mon 2/17	Arrays	2/17 – 9:30 AM	HW 5 Due Sun. 3/01 9 PM	LAB 05	Activity
	L12 Wed 2/19	Arrays	2/19 – 9:30 AM			
7	L13 Mon 2/24	Midterm 1 Review	N/A	No HW	Lab Exam (in Lab)	Midterm 1 (in Classroom)
	C14 Wed 2/26	Midterm 1	N/A			
8	L15 Mon 3/02	Pointers	3/02 – 9:30 AM	HW 6 Due Sun. 3/15 9 PM	LAB 06	Activity
	L16 Wed 3/04	Pointers	3/04 – 9:30 AM			
9	L17 Mon 3/9	Pointers/Arrays/Str	3/19 – 9:30 AM	HW 7 Due Sun. 3/22 9 PM	LAB 07	Activity
	L18 Wed 3/11	Pointers/Functions	3/11 – 9:30 AM			
10	Mon 3/17	NO CLASS: Spring Break		N/A	N/A	N/A
	Wed 3/19	NO CLASS: Spring Break				

11	L19 Mon 3/23	Structures	3/23 – 9:30 AM	HW 8 Due Sun. 4/12 9 PM	LAB 08 (A)	Activity
	L20 Wed 3/25	Structures	3/25 – 9:30 AM			
	Friday 3/27	***CLASS DROP DEADLINE***				
12	L21 Mon 3/30	Midterm 2 Review	N/A	N/A	LAB 08 (B)	Midterm 2 (in Classroom)
	L22 Wed 4/01	Midterm 2	N/A			
13	L23 Mon 4/06	Files	4/06 – 9:30 AM	HW 9 Due Sun. 4/19 9 PM	LAB 09	Activity
	L24 Wed 4/08	Files	4/08 – 9:30 AM			
14	L25 Mon 4/13	Recursion	4/13– 9:30 AM	HW 10 Due Sun. 4/26 9 PM	Final Project	Activity
	L26 Wed 4/15	Recursion	4/15 – 9:30 AM			
15	L27 Mon 4/20	Recursion	4/20 – 9:30 AM	N/A	Final Project	Activity
	L28 Wed 4/22	Selected Topics	4/22 – 9:30 AM			
16	L29 Mon 4/27	Selected Topics	N/A	N/A	Final Project Due	N/A
	L30 Wed 4/29	Final Review	N/A			
	Dead Week					
17	Final Exam - TBD					

ZyBook Readings

Unless stated otherwise there will be ZyBook reading assignment for every class other than THE first class. ZyBook readings are due before each lecture (except review lectures and in-class exams). Please see class schedule for exact readings due date/time.

Homework Assignments

There will be a maximum of **11 homework** assigned throughout the semester (please see the class schedule). All homework questions assigned on Zybook (**Challenge activities**) should be completed and submitted in the ZyBook itself. Please check ZyBook for the assigned HW and the class schedule for the due date/time.

IMPORTANT: Late homework will not be accepted. Period. Late homework will automatically receive 0 credits. Timely submission of homework is your responsibility.

In-Class Activity

There will be in-class activities every week where groups of 2/3 students will work on an assignment during the lecture and will submit their solution(s) to the instructor or via canvas.

Exams

Lab Exams: Location in Regular lab

One Lab exams is scheduled as follows:

- Last week of February (See class schedule) – During regular lab sessions.

Midterm Exam: Location in Regular classroom

Two midterm exams are scheduled as follows:

- Midterm Exam 1: **Wednesday, February 26**
- Midterm Exam 2: **Wednesday, April 1**

Final Exam: Location in Regular classroom

There will be a final exam during the final week. The exact day/time can be found on the ISU Registrar's office link below.

<http://www.registrar.iastate.edu/students/exams/springexams>

The final exam for SE 185 based on the first contact time is **Thursday, May 07, 9:45 - 11:45 p.m.**

Grading Policy

Grading Scale:

93 – 100	= A
90 – 92.99	= A-
87 – 89.99	= B+
83 – 86.99	= B
80 – 82.99	= B-
77 – 79.99	= C+
73 – 76.99	= C
70 – 72.99	= C-
67 – 69.99	= D+
63 – 66.99	= D
60 – 62.99	= D-
0 – 59.99	= F

Grading Percentages:

ZyBook Reading:	10%
In-Class Activity:	5%
ZyBook Homeworks:	12%
Labs Attendance:	5%
Pre-lab + Lab (reports + demonstration + lab exam):	30%
Final Project:	5%
Exams (2 midterms + 1 final):	35%
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TOTAL:	102%

Appealing a Grade:

You will have a two-week window of appeal after each homework/exam is graded and returned. The grade challenge must be in writing and must clearly state the specific problem on the homework/exam in question and the reason for your challenge. The written statement and the original exam must be submitted to the instructor during the two-week window. After two weeks the grade cannot be changed.

Class Attendance Policy

Lab attendance is **mandatory attendance for all labs**. You are expected to attend ALL lectures. If you have a valid reason to miss a class (e.g., because you are ill) then it is your responsibility to find out what we have talked about in class, including any announcements that were made during class. Extenuating circumstances and other absences from classroom will be handled in accordance with university policies ([Read this](#)) and/or case-by-case basis at the instructor's discretion.

Policy on Collaboration

You are encouraged to form study groups and discuss the reading materials assigned for this class. You are allowed to discuss the homework assignments with your colleagues. However, each student will be expected to write his/her own solutions/code. Sharing of code is not allowed. No collaboration will be allowed during the exams. Please read about [Academic Dishonesty](#). **Students found cheating in course work will receive Fail grade in SE 185.**

IMPORTANT: Cheating, plagiarism, and other academic misconducts will not be tolerated and will be handled according to the [ISU's academic dishonesty procedures](#).

Lab Safety

This class has a substantial hands-on laboratory section. Students will be using expensive, sensitive, and potentially hazardous equipment. Safety in the lab is a number one priority for students and instructors and to ensure a safe laboratory experience, a brief safety presentation will be given during the first lab session. It is mandatory that all students attend this presentation. Moreover, it is expected that students follow any and all posted safety guidelines. All students must sign the [lab safety form](#).

For reference, a copy of the University Laboratory Safety Manual can be found at: www.ehs.iastate.edu/sites/default/files/uploads/publications/manuals/labsm.pdf

See also the [safety page of the ECpE Department](#).

Teaching Assistant help throughout the semester

You will have two TAs in your lab section. They will be your grading TAs for demonstrations, as well as your instructors for the lab portion of this course. They will have office hours to help you with your coding or to explain concepts if you are having problems. Get to know them! They have been successful in this course and will have insights into future courses you will be taking. You will also have a TA who will be grading the lab reports. He/She will read the weekly lab assignments and grade them.

Beyond help from the TAs, you can go to the IEEE Eta Kappa Nu honor society help hours. Generally, it is from 2-5 p.m. every day of the week in their office in Coover 1219. You can get the most updated information from their website: <http://hkn.ece.iastate.edu/>

Religious Accommodation

If an academic or work requirement conflicts with your religious practices and/or observances, you may request reasonable accommodations. Your request must be in writing, and your instructor or supervisor will review the request. You or your instructor may also seek assistance from the [Dean of Students Office](#) or the [Office of Equal Opportunity](#).

Students with Disabilities

Iowa State University is committed to assuring that all educational activities are free from discrimination and harassment based on disability status. All students requesting accommodations are required to meet with staff in [Student Accessibility Services office \(SAS\)](#) to establish eligibility. SAS will then provide electronic access to Notification Letters through that system. Both student and instructor will receive an email with a link to access the NL within Accommodate. Student are suggested to meet with the instructors in person or contact via email, to discuss the implementation of the indicated accommodations and each should digitally sign the NL (vs. sign a paper copy). Students are encouraged to contact SAS as early in the semester as possible. SAS, a unit in the Dean of Students Office, is located in room 1076, Student Services Building or online at www.dso.iastate.edu/dr. Contact SAS by e-mail at accessibility@iastate.edu or by phone at 515-294-7220 for additional information.

Classroom Behavior Policy

Combined effort of students and instructor is essential to foster productivity and provide better learning experience for all registered students. Disruption of any kind in the classroom and the laboratory will not be tolerated. Student(s) identified as being disruptive will be removed from the classroom and laboratory. The Dean of students will be notified about the disruptive behavior and further action as deemed necessary will be taken.

Harassment and Discrimination

Iowa State University strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon race, ethnicity, sex (including sexual assault), pregnancy, color, religion, national origin, physical or mental disability, age, marital status, sexual orientation, gender identity, genetic information, or status as a U.S. veteran. Any student who has concerns about such behavior should contact his/her instructor, [Student Assistance](#) at 515-294-1020 or email dso-sas@iastate.edu, or the [Office of Equal Opportunity](#) at 515-294-7612.

Mutual respect and Professionalism

You are expected to treat your instructor/teaching assistants/peer students and all other participants in the course with courtesy and respect. Your comments to others should be factual, constructive, and free from harassing statements. You are encouraged to disagree with other students, but such disagreements need to be based upon facts and documentation (rather than prejudices and personalities). It is the instructor's goal to promote an atmosphere of mutual respect in the classroom. Please contact the instructor if you have suggestions for improving the classroom environment. It is preferable if students discuss issues directly with the instructor, however, students may also leave a note in the instructor's mailbox.

How to Access Course Materials?

1. Follow the link below and log on to Canvas with your NetID
<https://canvas.iastate.edu/>
2. Select the course (e.g., SE185 from the Dashboard)

Announcements

Announcements may be made in classroom and/or through Canvas. Regular classroom attendance will keep students updated of classroom activities/announcements. Students must also periodically check Canvas for announcements and updates out of regular class hours.

Small Print

The instructor reserves the right to change any and all aspects of this class for whatever reason or no reason at all (a.k.a., academic freedom).