

CS 466 Syllabus

CS 466 Information Systems – a Computer Science Overview – Spring 2012

Instructor Name:	Dr. Jim Prater
Phone:	205-348-0617
Email:	jprater@cs.ua.edu
Office Hours:	Tuesday-Thursday 10:00 am to 1:00 pm
Office	202 Houser Hall

Course Description

A broad, general overview of the field of Computer Science designed to tie together concepts that the student has encountered through the CS minor.

3 credit hours.

Course Prerequisites

CS 102 and at least 2 other courses from among CS 114, CS 202, CS 205, CS 285, CS 302, CS 385.

Learning Objectives

Upon successful completion of this course, the student will be able to:

- describe the layers of a computer system
- distinguish between hardware issues and software issues
- use binary numbers and understand their importance
- explain data representation, data manipulation, and data compression
- identify hardware components
- understand basic programming concepts
- apply problem solving techniques
- demonstrate an understanding of the object-oriented paradigm
- integrate diverse concepts from the broad field of computer science into a focused understanding of operating systems, information systems, artificial intelligence, and networks

Required Text

Computer Science Illuminated (with Access Code) by Nell Dale and John Lewis, ISBN: 978-0-7637-8987-9, Publisher: Jones and Bartlett

Textbook website <http://computerscience.jbpub.com/csilluminated/4e/>

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Course Topics

Please reference The University of Alabama [Academic Calendar](#) for other important dates.

CS 466 Course Schedule		
Module Start Date:	Module / Assignment Description:	Assignment Due Dates:
1/18	Module 1: The Big Picture	1/24
	Reading Assignment: Chapter 1 (pages 2-28)	
	Exercises for Chapter 1: #1-38, 48, 50	
	Laboratory 1 Exercise 1	
	Submit answers for the Animated Flashcards for Chapter 1 as a .doc	
1/25	Module 2: Binary Values and Number Systems	1/31
	Reading Assignment: Chapter 2 (pages 32-46)	
	Exercises for Chapter 2: # 1-17, 21-24, 28-46	
	Laboratory 2 Exercise 1	
	Submit answers for the Animated Flashcards for Chapter 2 as a .doc	
2/1	Module 3: Data Representation	2/7
	Reading Assignment: Chapter 3 (pages 52-83)	
	Exercises for Chapter 3: #1-34, 47, 49-53	
	Laboratory 3A Exercises 1 and 2, 3C Exercise 1	
	Submit answers for the Animated Flashcards for Chapter 3 as a .doc	
2/8	Module 4: Gates and Circuits	2/14
	Reading Assignment: Chapter 4 (pages 90-111)	
	Exercises for Chapter 4: #1-30, 34, 53, 58-63, 69, 73	
	Laboratory 4 Exercises 1, 2, and 3	
	Submit answers for the Animated Flashcards for Chapter 4 as a .doc	
2/15	Module 5: Computing Components	2/21
	Reading Assignment: Chapter 5 (pages 117-145)	
	Exercises for Chapter 5: #1-23, 27-43	
	Laboratory 5 Exercises 1, 2 and 3	
	Submit answers for the Animated Flashcards for Chapter 5 as a .doc	
2/22	Module 6: Low-Level Programming Languages and Pseudocode	2/28
	Reading Assignment: Chapter 6 (pages 150-188)	
	Exercises for Chapter 6: #1-23, 29, 33, 34, 41-48, 55-60	
	Laboratory 5 Exercises 4, 5, and 6	
	Submit answers for the Animated Flashcards for Chapter 6 as a .doc	

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2/29	Module 7: Problem Solving and Algorithms	3/6
	Reading Assignment: Chapter 7 (pages 194-237)	
	Exercises for Chapter 7: #7-36, 37, 42, 44, 45, 51, 52, 56, 58, 66, 67	
	Laboratory 6 Exercises 1 and 2	
	Submit answers for the Animated Flashcards for Chapter 7 as a .doc	
3/7	Module 8: Abstract Data Types and Subprograms	3/20
	Reading Assignment: Chapter 8 (pages 242-276)	
	Exercises for Chapter 8: #1-32, 34, 35, 37, 38, 47, 48, 49, 50	
	Laboratory 9A Exercises 1 and 2	
	Submit answers for the Animated Flashcards for Chapter 8 as a .doc	
3/21	Module 9: Object-Oriented design and High-Level Programming Languages	3/27
	Reading Assignment: Chapter 9 (pages 284-325)	
	Exercises for Chapter 9: # 11-24, 39-44, 47-49, 54, 57, 59, 61, 62, 64, 67, 68, 72, 77-84	
	Laboratory 9B Exercises 1, 2 and 4	
	Submit answers for the Animated Flashcards for Chapter 9 as a .doc	
3/28	Module 10: Operating Systems	4/3
	Reading Assignment: Chapter 10 (pages 332-355)	
	Exercises for Chapter 10: #1-28, 31, 33, 34, 37-43, 46, 48	
	Laboratory 10 Exercises 1 and 2	
	Submit answers for the Animated Flashcards for Chapter 10 as a .doc	
4/4	Module 11: File Systems and Directories	4/10
	Reading Assignment: Chapter 11 (pages 362-380)	
	Exercises for Chapter 11: #1-23, 28-31, 34-41, 44, 46, 51, 52, 53	
	Laboratory 11, Exercise 1	
	Submit answers for the Animated Flashcards for Chapter 11 as a .doc	
4/11	Module 12: Information Systems	4/17
	Reading Assignment: Chapter 12 (pages 386-417)	
	Exercises for Chapter 12: #1-31, 46, 48, 55, 57, 60, 69, 73, 82, 84	
	Laboratory 12A Exercise 1, 12B Exercise 1	
	Submit answers for the Animated Flashcards for Chapter 12 as a .doc	
4/18	Module 13: Artificial Intelligence	4/24
	Reading Assignment: Chapter 13 (pages 424-451)	
	Exercises for Chapter 13: #1-21, 31, 33, 34, 38, 39, 44,	

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	54-66	
	Laboratory 13 Exercises 1 and 2	
	Submit answers for the Animated Flashcards for Chapter 13 as a .doc	
4/25	Module 14: Simulation, Graphics, Gaming, and Other Applications	5/1
	Reading Assignment: Chapter 14 (pages 456-492)	
	Exercises for Chapter 14: #1-33, 38-40, 46, 50-52	
	Laboratory 14 Exercises 1 and 4	
	Submit answers for the Animated Flashcards for Chapter 14 as a .doc	
5/2	Module 15: Networks and The World Wide Web	5/4
	Reading Assignment: Chapters 15 and 16 (pages 496-517 & 522-542)	
	Exercises for Chapters 15-16: pages 517-519 #1-25, page 544 #23-37	
	Laboratory 15 Exercises 1 and 4, 16A Exercise 1	
	Submit answers for the Animated Flashcards for Chapters 15 and 16 as .doc files	

Grading

The grading for this course will be handled as follows: For each Module the correct flashcard answers must be properly submitted. If they are not properly submitted then the other work for the module (exercises, lab, and quiz) will not count until such time as the correct flashcard answers are submitted. The correct flashcard answers thus serve as a gateway to the grading of the rest of the assignment materials but they COUNT FOR NO POINTS THEMSELVES. For each module a grade will be given for the exercises of which 25 will be graded randomly (50 points), the lab (50 points), and the quiz (100 points) after the correct flashcard answers have been submitted. So each Module is worth up to 200 points. The 15 Modules thus add up to a total of 3000 possible points.

Final grades will be computed as follows: $(\text{points earned}) / 3000 * 100 = \text{final percentage}$, which will be rounded to the nearest tenth.

A letter grade will then be issued based on the following scale.

98.0-100 A+	72.0-77.9 C
92.0-97.9 A	70.0-71.9 C-
90.0-91.9 A-	68.0-69.9 D+
88.0-89.9 B+	62.0-67.9 D
82.0-87.9 B	60.0-61.9 D-
80.0-81.9 B-	0-59.9 F
78.0-79.9 C+	

If an assignment or quiz due date is missed, the student has one week after the due date to get to the instructor an explanation for the missed work. If the explanation is

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deemed worthy, arrangements will be made between the student and the instructor concerning how to handle the missed work. If the explanation is deemed unworthy, zeroes will be recorded for the missed work. **If you miss the date due to technical problems, email your assignment to cs466@cs.ua.edu.**

Worthy excuses are things such as personal illness, or University of Alabama activities, or unexpected (and verifiable) work or family emergencies.

Unworthy excuses are things such as "my computer broke 5 minutes before the assignment was due", or "my sister's roommate's dog has an allergy", or "I forgot".

Suggested study methods

The keys to success in this course are to start immediately on each new module, complete the readings early, look over the exercises and lab assignment early, and get started on preparing your submissions early. The due dates are firm and, as everything is to be submitted through eLearning, submissions will not be possible after the due date.

Course Presentation

This course is organized into 15 learning modules; each module contains a set of assigned readings from the textbook and contains a quiz, an exercise set, a lab assignment, and a flashcard activity. The lab assignment and the flashcard activity are to be found on the companion textbook website. All exercises, labs, and flashcard activities are to be submitted as Word documents through eLearning. CS 466 will be divided into modules presented on a weekly basis. The module pages include information about all of the materials and assignments for that module. Each module includes multimedia lectures, readings, assignments, and assessments.

Email

You should only contact your instructor by using your crimson email account and sending to his email address at jprater@cs.ua.edu.

Bonus points can be attained but you must attend at least 36 classes starting on January 20 to receive any extra points at the end of the semester. Any classes attended after 36 will increase your bonus points. Bonus points are counted as six points per class after you have attended at least 36 classes. Also, it should be noted that signing the roll for an absent student constitutes academic misconduct.