

Fall 09

CS 10051 – 600 * Introduction to Computer Science

*Department of Computer Science
Kent State University Stark*

TR 11:00 AM - 12:15 PM - Room MH 212 (Instructor: [Dr. Angela Guercio](#))

Laboratory: **F** 11:00 AM - 1:00 PM - Room MH 306 (Instructor: Prof. Judith Edwards)

Class Instructor	Lab Instructor
Dr. Angela Guercio	Dr. Judith Edwards
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Phone: 330 244-3424 (KSU ext. 53424)	Phone: 330 244-3319 (KSU ext. 53319)
Best way to contact me: e-mail to aguercio@kent.edu	Best way to contact me: e-mail to jedwar9@kent.edu
Office Hours: TR 10:00am - 10:55am 12:25pm - 1:55pm 4:55pm - 5:25pm other times are available by appointment	Office Hours: F 9:40-10:55am 1:15pm – 2:30pm Other times are available by appointment

Course Information

Class Webpage: <http://www.personal.kent.edu/~aguercio/Fall09/CS10051-600Fa09.html>

- all important class information will be posted on the class webpage, readings, assignments, notes, deadlines, cancellations, ect..
- You must **CHECK THE CLASS WEBSITE REGULARLY!!!**

Laboratory Webpage: <http://www.personal.kent.edu/~aguercio/lab51/labindex.html>

Prerequisites: No prerequisites

Credit: 4

Required Texts:

G. M. Schneider, J. Gersting – *An Invitation to Computer Science, C++ Version* – Thompson, 4th Edition, 2006, ISBN-13: 9781423901419.

K. Lambert, T. Whaley - *Invitation to Computer Science Laboratory Manual: C++ and Java* - Cengage Learning, 4th Edition, 2006, ISBN-13: 9781418837549

Emergency: In case of an emergency please contact the security on campus.

Security phone on campus: #53123

Security cell phone (330) 705-0430 or, of course, 911.

I recommend that you program into your cell phone the previous numbers.

Course Outline and Objectives

This course will introduce you to the computer science discipline. The course covers

- the algorithmic foundations of computer science by introducing the concept of algorithm, algorithm design, the efficiency of algorithms;
- the hardware world by introducing binary numbers, Boolean logic, gates and circuits, and computer organization;
- virtual machines and computer networks;
- the software world by introducing high level language programming and the use of compilers.

The objectives of the course are:

- to introduce you to the basic terminology of the Computer Science discipline;
- to expose you to the foundation of this discipline and to show you the ideas and principles that helped its formation;
- to show what can be done and what cannot be done in computing;
- to introduce the most important elements of computing;
- to expose you to the basic elements of programming and to provide an experimental approach to the computer science discipline;
- to deepen your writing ability on scientific issues in computing;
- to improve your ability to read and understand computing material;
- to develop in you a familiarity with computing elements and to enable to use them for future courses;
- to show alternative solutions to computer science problems and discuss the complexity of the solutions;
- to provide you with hands-on experience in computing;
- to develop in you an appreciation for the interesting features of this discipline.

Class Requirements and Expectations

1. Regular class attendance is **REQUIRED**.



There tends to be a strong correlation between class attendance and grade performance. If you will miss a class or a lab, **let me know ahead of time**. In

any case, you are responsible for bringing yourself up to date on class material and assignments.

- ✦ Since class participation and regular attendance are part of the final grade, **if you miss more than 4 classes without a documented reason or without making prior arrangements with me, your final grade will be dropped one grade (A to B, B+ to C+ and so on).**

2. Laboratory attendance is MANDATORY.

- ✦ Lab activity **MUST** be started in class and can be completed at home only with instructor permission. Laboratory worksheets will not be accepted if you are absent during the laboratory. **Labs completed at home without instructor permission or health professional's excuse will not be accepted.**

3. COMPLETE the laboratory activity.

- ✦ Laboratory activity is issued weekly and must be completed in class.
- ✦ For each lab activity you will be asked to perform a Lab Experiment and to complete a Lab Worksheet.

4. Reading ahead is REQUIRED.

- ✦ The readings are posted online on the class webpage. You must read the material **before** class **and again after** the class.
- ✦ Regular study of the material is REQUIRED. We will roughly cover ½ to 1 chapter per week.

5. COMPLETE the assigned homework.

- ✦ Regular homework assignments will be given and they will be posted online on the class webpage.
- ✦ The class webpage will list the assignments for each week at the beginning of that week so that you can better schedule your work.

6. REVIEW the graded Homework/Labs.

- ✦ Homework and Labs will be graded and some difficulties will be discussed in class. Review the mistakes.

- ✎ Late Homework/Lab Reports will not be accepted if returned after the solution is given or discussed.

7. Return work ON TIME

- ✎ All the printed copies of the Homework are due *before or at the beginning of class*. All assignments, either printed or submitted via e-mail, turned in one day late will get **3 points per day penalty** including those returned after the beginning of class.
- ✎ For any homework that is e-mailed, the instructor will acknowledge the receipt within 24 hours via e-mail. The time of your e-mail will be compared against the work deadline. The reply is your receipt that the work has been turned in (not that it is correct!). If you do not receive a receipt, it is YOUR responsibility to contact me to see if the assignment has been lost in transmission. **Important:** once you submit your files **DO NOT OPEN THEM AGAIN!** If your e-mail didn't reach me or something happened to your files, I may need to ask you to resubmit your files by logging on in my presence to check the modification dates on your files and make sure that they haven't been modified after the due date.

What to expect to find in your computer science class

- The class should be interactive. In-class questions and exercises are designed to encourage participation. There will be in class cooperation, open discussions about problems and possible solutions.
- You will be exposed to traditional lecture methods on the blackboard as well as computer presentations and hands-on activities. Handouts will be given when necessary, but in general PowerPoint slides of the lectures will be available. In any case, you are responsible for taking good notes.
- You will participate in group activities. Collaborative learning will be used to discuss possible solutions to problems as well as to provide critical observations to problem solutions. Formal and/or informal groups will be formed in class to stimulate team work. In some cases, you will be required to work on your own. In those cases, I expect appropriate academic behavior from you. Exchange of information, when forbidden, is not appropriate.
- You will work both **with** and **without** a computer. The laboratory activity provides hands-on application of the concepts learned in class and complements the theoretical studies of the computer science discipline. Exercises and problems solved without the computer will help you in developing the ability to discuss and identify the most appropriate techniques for the solution of a problem, and to

stress the importance of the development of an optimal design of the solution contrary to a “brute-force” design driven by the specific computer requirements (i.e. the first solution that comes to your mind and that you design directly on the computer!) which is typical of an untrained person.

- Expect to commit some time each day to study the theory of computer science and to observe, analyze, solve and report the solution of the assigned lab problems.

Some Useful Hints:

- ✓ **Do not procrastinate! Homework and Labs should be started immediately. You will find out that it requires more time than you have planned!** Lab experiments and reports will need considerable extra time for completion when errors occur. **Any error discovered at the last minute might be the cause of an undesired delay, so plan accordingly!**
- ✓ If you have difficulties doing your homework or your Labs, get help from the Instructor, prepare questions for class, or visit my office.
- ✓ If my office hours do not work for you, ask for an appointment.
- ✓ If your difficulties are in writing, get help from the Writing Center.

The **Secret Key** (not so secret after all!) of how to succeed in this CS class is to:

1. work conscientiously and do all the homework that has been assigned;
2. extrapolate, from the examples provided to you, techniques and answers to problems;
3. spend several hours at the computer to solve problems as well as reading material;
4. be alert and participate in class discussions;
5. learn from other peoples’ mistakes;
6. be critical of your own work. Question every step you are making; ask yourself “Is this step correct?” “Are there other easier or more efficient alternative steps?”
7. attend the class and the laboratory regularly;
8. spend time studying the theoretical concepts. Memory helps, but it is practice that reinforces the theory;
9. do all the above consistently through the whole semester, be confident about what you are doing and don’t be afraid to ask for help;
10. Think and enjoy!

I am very confident that you can make the above commitment and that you can maintain it during the semester. I am sure that you have all the ability to be successful!

Exams

- ✦ There will be 3 100-points Mid-Term Exams which will cover the topics of the previous 4 weeks.
- ✦ The 100-points Final Exam is comprehensive and will cover with greater stress the topics of the last 3 weeks of the course.
- ✦ All exams are closed books, closed notes.
- ✦ Retaking exams are not available.
- ✦ Make-up exams will only be given in case of serious need (written verification for your inability to take an exam is required) and only when I have been notified *prior* to the exam being issued, otherwise you are considered absent for that exam and the grade of your exam is automatically 0.

Grading

Your grade will be based on

1. Your homework completion
2. Your Lab Activity completion
3. Your participation in discussions concerning the homework, class topics and reading material
4. Your attendance in class and in the lab
5. ...and, of course, your exams!

The COURSE is formed of two independent parts.

TO PASS THE COURSE, YOU MUST PASS EACH PART GIVEN BELOW INDEPENDENTLY!

---- i.e. an A in PART II and an F in PART I, is NOT a passing grade.

Part I

Labs Attendance and Worksheets 25%
Penalty for late lab report: 3 points a day

Part II

Homework and Class Participation 10%
Penalty for homework: 3 points a day

Exam 1	15%
Exam 2	15%
Exam 3	15%
Final Exam	20%

Points	Grade
92.5-100	A
89.5-92.4	A-
87-89.5	B+
82.5-86.9	B
80-82.4	B-
77.5-79.9	C+
72-77.4	C
70-72	C-
67.5-69.9	D+
60-67.5	D
00-59.9	F

Course Withdrawal

If you are considering withdrawing from this course, please inform your instructor and consult with a staff member in the Student Services Office, 134 Main Hall. Withdrawal from a course can affect financial aid, student status, or progress within your major. For withdrawal deadlines, please refer to http://www.registrars.kent.edu/home/TermUpdate/sche_adj.htm.

Academic Honesty Policy

When assignments must be individually and independently done, if some students turn in substantially the same solution or program of another student, in my judgment, the solution will be considered a group effort. All involved in the group effort homework will receive a zero grade for that assignment. Policy on academic dishonesty involving programming can be found at <http://www.cs.kent.edu/programs/grad/DishonestyPolicy.pdf>.

Use of the intellectual property of others without attributing it to them is considered a serious academic offense. Cheating or plagiarism will result in a failing grade for the work or for the entire course. Repeat offenses result in dismissal from the University. University guidelines require that all infractions be reported to the Student Conduct Officer on our campus.

Students with Disabilities

Kent State University recognizes its responsibility for creating an institution atmosphere in which students with disabilities can succeed. In accordance with University Policy Subpart E...104.44, if you have a documented disability, you may request accommodations to obtain equal access in this class. Please contact the disability coordinator on campus, Kelly Kulick in Student Accessibility Services, located in the Student Success Center, lower level of the Campus Center, phone (330) 244-5047, or kkulick@kent.edu. After your eligibility for accommodations is determined, you will be given a letter which, when presented to instructors, will help us know best how to assist you.

Classes Canceled – Campus Closings

Announcements of class cancellations and/or campus closings will be made on the campus home page. In the case of an emergency, weather-related or otherwise, please check the web page at stark.kent.edu for information on the buildings and times of the closing. While information may be broadcast by radio and television, this should be confirmed by the web page, which is the official announcement of the campus and which will be the information used to determine issues related to student attendance, rescheduling of tests, and other concerns.

Conduct

Students and faculty behavior at the Stark Campus is governed by the guidelines set forth in *The Digest of Rules and Regulations*. That document can be found in the University telephone directory. Information can be found at the Office of Judicial Affairs at <http://www.kent.edu/administration/emsa/judicial.cfm>.

Recycling

KSU Stark Campus recycles! Recycling saves energy, which is currently generated by expensive and vanishing fossil fuels. Recycling one aluminum can saves enough energy to run a TV for three hours! Please take a few seconds to separate your trash. Aluminum cans and plastic and glass bottles may be placed in the blue recycling bins, and all types of paper may be placed in the blue recycling trash cans. All other waste may be placed in the black, brown or gray trash cans.

Important Dates to Remember

- Last day to withdraw *before grade W* is assigned, is Sept.13, 2009
- Last day to drop the class is Nov. 8, 2009
- Exam 1 is Tuesday, Sept. 29
- Exam 2 is Tuesday, Oct. 27
- Exam 3 is Thursday, Nov. 19
- Final Exam is Tuesday, Dec. 15 (10:30am – 12:30pm)

Thanksgiving Recess: Nov. 25 – Nov. 29

Classes End: Dec. 15, 2009

The Course Outline

- Labs days are highlighted in orange
- Review days are highlighted in green
- Exams days are highlighted in yellow
- More Assignments may be issued according to the needs of the class

	Month/Day	Weekday	Topic	Reading, Assignments and Deadlines	Class Slides
1	Sept 1	T	Introduction to Computer Science:	Read Chapter 1 and 2.	Ch 1

			Definition of Algorithm	First Assignment Deadline: e-mail your assignment by 10:59 a.m. by Sept 3.	
2	Sept 3	R	Introduction to Computer Science: Definition of Computer Science. Introduction to Algorithm Design: Pseudocode	There are a few symbols missing in Ch.2 of the new edition. Here is an Errata Corrige (latin for "correct the errors") for you. Please add the missing symbols in your Chapter.	Ch 2
1L	Sept 4	F	Lab 1	Deadline for all the Labs: Each Lab Worksheet must be returned in class by the end of the lab session.	
3	Sept 8	T	Algorithm Design: More algorithms in Pseudocode with Sequential Operations, Conditional and Iterative Operations, Sequential Search, Find the maximum	Read ahead Chapter 3.	
4	Sept 10	R	Algorithm Design: Pattern Matching Algorithm. The efficiency of the algorithms: Sorting		Ch 3
2L	Sept 11	F	Lab 2		
5	Sept 15	T	The efficiency of the algorithms: Data Cleanup		
6	Sept 17	R	More Data Cleanup Algorithm		
3L	Sept 18	F	Lab 3		
7	Sept 22	T	Binary search, Pattern Matching, When things get out of hands	Read ahead Chapter 4.	
8	Sept 24	R	Review and Practice - Algorithm Design		
4L	Sept 25	F	Lab 4		
9	Sept 29	T	Exam 1 (Ch 1-3)		
10	Oct 1	R	Binary Numbers, Algorithms for Base Conversion	Assignment 2 due before class on October 6.	Ch 4
5L	Oct 2	F	Lab 5		
11	Oct 6	T	Signed Magnitude, Two's complement, Text and Image representation		
12	Oct 8	R	Review and Practice: Base Conversion and Data Representation		
6L	Oct 9	F	Lab 6		
13	Oct 13	T	Boolean Logic - Gates - Truth Tables		
14	Oct 15	R	CE, Adder, Control Circuits		
7L	Oct 16	F	Lab 7		
15	Oct 20	T	Review and Practice – Base Conversion		
16	Oct 22	R	Review and Practice – Boolean Logic and Circuits		Ch 5

8L	Oct 23	F	Lab 8		
17	Oct 27	T	Exam 2 (Ch. 4)		
18	Oct 29	R	Computer Systems Organization: Memory	Read ahead Chapter 5	
9L	Oct 30	F	Lab 9		
19	Nov 3	T	Computer Systems Organization: Control Unit		Ch 6
20	Nov 5	R	Computer Architecture	Read ahead Chapter 6.	
10L	Nov 6	F	Lab 10		
21	Nov 10	T	System Software and Virtual Machine: Machine Language		
22	Nov 12	R	Review and Practice – Review and Practice – Memory, CU and Architecture-Assembly		
11L	Nov 13	F	Lab 11		
	Nov 17	T	Veterans Day - No Class		
23	Nov 19	R	Exam 3	Read ahead Chapter 8.	
12L	Nov 20	F	Lab 12		
24	Nov 24	T	High Level Language Programming		
	Nov 25-29		Thanksgiving Recess		
25	Dec 1	T	High Level Language Programming		Ch 8
26	Dec 3	R	High Level Language Programming		
13L	Dec 4	F	Lab 13		
27	Dec 8	T	High Level Language Programming		
28	Dec 10	R	Review and Practice		
14L	Dec 11	F	Lab 14		
29	Dec 15	T	10:30 am - 12:30pm - room MH 212 Final Exam (comprehensive)		