Spring 2010

CS 23021 Section 600
Computer Science I

MW 2:00 PM - 3:15 PM - Room MH 306

MW 3:30 PM – 4:30 PM - Room MH 306 (Laboratory)

Class Instructor	Lab Instructor
Dr. Angela Guercio	Prof. Kevin Schaffer
Office: 424, Main Hall	**Office:** 310G, Desk #4, Main Hall
Phone: 330 244-3424 (KSU ext. 53424)	**Phone**: 330 244-3311 (KSU ext. 53311)
Best way to contact me:	**Best way to contact me:**
e-mail to aguercio@kent.edu	e-mail to kschaffe@kent.edu
Office Hours:	**Office Hours:**
Office hours 11:00am – 12:00pm, MW 4:00pm-6:00pm MW, or by appointment.	**MW** 1:00pm-2:00pm or by appointment.

Course Information

Prerequisites: CS10051 **Credits:** 4

Required Texts:

Walter Savitch – *Problem Solving with C++- The Object Oriented Programming*– Pearson Addison Wesley, 7th Edition, 2008.

Other texts or papers that I might require you to read will be given in class.

Class Webpage:

http://www.personal.kent.edu/~aguercio/Spring10/CS23021Sp10.html

The class webpage contains copy of this syllabus, the reading assignments as well as homework and important class information. Please, **CHECK THE CLASS WEBSITE REGULARLY!!!**

Lab Webpage:
http://www.personal.kent.edu/~aguercio/lab23021/index.html

Important Dates to Remember

- Last day to drop the class is Sunday, January 31 (without W grade)
- Last day to drop the class is Sunday, April 4 (with W grade)
- Exam 1 is Monday, Feb. 24
- Exam 2 is Monday, March 24
- Final Exam is Monday, May 10 (3:30 pm – 5:30pm)

Spring Recess: March 29 – April 4, 2010

Classes End: May 8, 2010

Course Outline and Objectives

This course will introduce you to the Object Oriented paradigm. This course will teach you how to write programs using the object-oriented paradigm language C++, and will cover the syntax of the language. Particular attention will be paid to program design and the problem-solving methodologies, which should be used to produce a program of good quality.

The course outline covers

- The C++ basic features;
- Procedural Programming and Object Oriented Programming;
- Variables, Data Types and Expressions
- Functions
- Classes and Objects
- Class Properties
- Inheritance
- Arrays and Vectors
- Pointers
- Testing and Debugging

The objectives of the course are:

- To introduce you to the object-oriented paradigm of the C++ language
- To teach you how to write a C++ program and how use the C++ compiler
- To introduce you to the most important elements of computing
- To deepen your program design abilities before proceeding in study of more complex problems and language features.
- To show that there are several ways to solve problems but some solutions are more efficient, better readable and easier to maintain than others. Being a program designer is different from being a 'brute force' programmer: problem-solving methodologies are essential for the scope and the language is the media through which we express those techniques.

- To teach you good programming habits.
- To empower you with the use of data structures.
- To learn how to select methodologies to apply to a series of sample problems. Examples of several classes of problems will be discussed in class.
- To give you hands-on experience in designing and testing C++ programs on different environments.
- To show you the interesting features of C++ such as pointers.
- To satisfy requirements the computer systems major and minor.

ATTENTION!!!

CS23021 is a prerequisite for CS33001. A grade of C or better is required to take CS33001. This means that a C- is not sufficient to meet the requirements.
For more details, please visit http://www.kent.edu/CAS/CS/undergraduate/planner.cfm

Grading

Your grade will be based on

1. Your homework and group projects
2. Your participation in discussions concerning the homework, class topics, and material
3. Your laboratory attendance and activity.
4. 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

Laboratory Attendance and Reports 30%

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 20%
Exam 2 20%
Final Exam 20%

Total percentage earned	Grade	Total percentage earned	Grade
92.5 – 100%	A	77.5 – 79.9%	C+
89.5 – 92.4%	A-	72 – 77.4%	C
87 – 89.4%	B+	68.5 – 71.9 %	C-
82.5 – 86.9%	B	62.1 – 68.4	D

80 – 82.4%	B-	62% and below	F

I reserve the right to change the weighting and number of assignments

Exams

- There will be 2 Mid-Term Exams which will cover the topics of the previous 5 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.

Course Policy

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**, <u>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).</u>**

2. **Reading ahead is REQUIRED**.

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

3. **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 unless. <u>Labs completed at home without instructor permission or health professional's excuse will not be accepted</u>.

4. **LABORATORY activity.**

- Laboratory activity is issued weekly and must be completed in class unless otherwise stated by the instructor.
- All the lab activity, homework assignment and projects should be zipped and e-mailed as an attachment to your instructor **AND** a printed copy should be returned to the instructor as well.

5. HOMEWORK assignments.

- Regular homework assignments will be given and 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.
- All assignments must be individually and independently completed. Should two or more students turn in substantially the same solution or program, in the judgment of the instructor, the solution will be considered a group effort. All involved in group effort homework will receive a zero grade for that assignment.
- No late assignment will be accepted after the assignment is graded and returned.
- A printed copy of each homework assignment must be turned (NO HAND WRITTEN COPY ACCEPTED). If you must miss a class when the assignment is due, you may e-mail a copy of the assignment in order not to have a late grade, but your assignment will only be graded when you have turned in an identical, printed copy.
- You may discuss the interpretation of the assignment with your classmates; however you may not discuss possible solutions.

6. Return work ON TIME

- All homework assignments are due at the beginning of class on the specified date. Assignments turned in after the beginning of class on the due date will be counted as one day late and will receive a 3 points penalty.
- All the e-mailed material will be acknowledged within 24h via e-mail. The time of your e-mail will be compared against the work deadline. My reply is your receipt that the work has been turned in (not that it is correct!). If such receipt is not received it is YOUR responsibility to contact me to see if the assignment has been lost in the 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.

7. 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.

What to expect to find in your computer science class

- The class should be interactive. In-class exercises are designed to encourage participation. There will be cooperation between you and I, open discussions about problems and possible solutions. Handouts will be given when necessary; however you are responsible for taking good notes.

- You will be exposed to traditional lecture methods on the blackboard as well as PowerPoint presentations. Your will participate in group activities and collaborative learning will be used to discuss possible solutions to problems as well as to provide critical observation to problem solutions. Formal and informal groups will be formed in class to work together. In some cases, you will be required to work on your own. In those cases, I expect an appropriate academic behavior from you. Exchange of information, when forbidden, will not be tolerated.

- You will work both with and without a computer. When working with a computer (your lab activity) you will experiment hands-on with the concepts that have been covered in class. The lab experimentation complements the theoretical studies of the computer science disciplines. Exercises without the machine will stretch your thinking in that direction.

- Expect to commit some time each day to practice the syntax of C++, to study the language, to program 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 labs, get help from the Instructor, prepare questions for class, or visit the instructor's office.
- If the instructor office hours do not work for you, ask for an appointment.
- Tutors are available in the Student Success Center for further help.
- If your difficulties are in writing, get help from the Writing Center.

The Top 10 Secret Keys to succeed in this CS class:

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!

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.personal.kent.edu/~aguercio/AcademicDishonestyPolicy.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://www1.kent.edu/emsa/JudicialAffairs.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.

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.

Tentative Outline of the Course

Jan 20	Introduction to C++
Jan 25	Introduction to C++
Jan 27	Basic C++: Variables and I/O
Feb 1	Basic C++: Control Flow
Feb 3	Applications of C++ Statements
Feb 8	Procedural Abstraction and Functions that return a value
Feb 10	Procedural Abstraction and Functions that return a value
Feb 15	Procedural Abstraction and Functions that return a value /Functions for all Subtasks
Feb 17	Functions for all Subtasks
Feb 22	Review and practice
Feb 24	Exam 1
Mar 1	Functions for all Subtasks
Mar 3	I/O Streams
Mar 8	I/O Streams as Intro to Object and Classes
Mar 10	Classes
Mar 15	Classes
Mar 17	Classes
Mar 22	Review and practice
Mar 24	Exam 2
------	Spring Recess
Apr 5	Defining Classes
Apr 7	Defining Classes

Apr 12	Abstract Data types
Apr 14	Arrays
Apr 18	Arrays and Multidimensional Arrays
Apr 21	C_Strings and Strings
Apr 26	Vectors
Apr 28	Vectors
May 3	Intro to Pointers and Dynamic Arrays
May 5	Review
Mon, May 10 (3:30pm-5:30pm)	Final Exam (comprehensive)