

**Farmingdale State College**  
**Computer Systems Department**  
**Spring 2015**  
**BCS 230 Foundations of Computer Programming II**  
**(CRN 23798, 23322, 20108)**

**Professor:** Dr. Jie Li

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Email for the instructor should be sent via the Angel Course Management System.

**Office Hours:** See Angel announcements

## **COURSE DESCRIPTION**

This course expands the knowledge and skills of Foundations of Computer Programming I. Among the topics covered are: arrays, pointers, strings, classes, data abstraction, inheritance, composition, overloading and templates.

**Prerequisite:** BCS 120 Foundations of Computer Programming I with a minimum grade of C

## **LEARNING OBJECTIVES**

At the completion of this course, students will:

- Learn the use of arrays in problem solving.
- Learn the sequential and binary search algorithms and one of the  $N^2$  sorting algorithms.
- Learn the use of two-dimensional arrays.
- Understand the differences between the C-style strings and the C++ string class. Practice using functions to manipulate strings.
- Be introduced to the use of structures for storing heterogeneous data.
- Learn how classes are implemented.
- Explore how classes are used to implement abstract data types.
- Learn the use of class inheritance and the use of base and derived classes.
- Learn how to use class composition in the development of their programs.
- Be introduced to the use of pointers and to dynamic memory allocation.
- Learn how to overload operators.
- Learn how to use templates.

## **REQUIRED TEXTBOOK**

C++ Programming: From Problem Analysis to Program Design, 6th Edition, by D.S. Malik, Cengage Learning, 2012. ISBN-13: 978-1-133-62638-1.

## **GRADING POLICY**

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|------------------------|-----|
| • Three Exams          | 30% |
| • Final Exam           | 20% |
| • Pop Quizzes          | 10% |
| • Homework Assignments | 40% |

The exams will be pre-announced. A missed exam will result in a zero for that exam. If you miss an exam with a valid serious cause, you should notify me immediately and provide a proof within a reasonable time. Your score may be adjusted based on your performance on other exams. NO MAKEUP EXAMS WILL BE GIVEN.

Quizzes will NOT be pre-announced. Your lowest quiz score will be dropped. NO MAKEUP QUIZZES WILL BE GIVEN.

Exams and quizzes will start and end on time. No additional time beyond the normal end time will be given to a student who arrives late.

All homework assignments must be completed and submitted by their due dates. Homework must be submitted via the submission drop box on Angel, not via email unless instructed. Each student will have two Late Passes. Each Late Pass allows a late submission up to 5 days from the due date but will be subject to a 20% late penalty. Late submission must be submitted via email with "Late Pass 1" or "Late Pass 2" in the subject line. Work submitted via email without a Late Pass will not be graded.

### **TENTATIVE SCHEDULE**

Week 1	Ch 1 to Ch 7 Review
Week 2	Ch 8 Arrays and Strings
Week 3	Ch 8 Continued
Week 4	Ch 9 Records (Structs)
Week 5	Exam 1 (Ch 8, 9)
Week 6	Ch 10 Classes and Data Abstraction
Week 7	Ch 11 Inheritance and Composition
Week 8	Spring Break
Week 9	Exam 2 (Ch 10, 11)
Week 10	Ch 12 Pointers, Classes, Virtual Functions, and Abstract Classes
Week 11	Ch 12 Continued
Week 12	Ch 13 Overloading and Templates
Week 13	Exam 3 (Ch 12, 13)
Week 14	Ch 16 Searching and Sorting
Week 15	Review
Week 16	Final Exam (cumulative)

### **STUDENT ATTENDANCE POLICY**

Class attendance is required for this class. Please be courteous and arrive ON TIME for class. If classes are missed for any reason, the student is not excused for any missed work. The student is responsible for fulfilling all course requirements and completion of all course assignments to receive credit for the course.

### **CLASS WITHDRAWAL POLICY**

Students must request an official withdrawal on or before the official deadline for withdrawal or they will receive an A through F grade. This policy is in alignment with the policy stated in the 2014 -2015 College Catalog which states: "A grade of "W" will be given to any student who officially withdraws from a course from the beginning of the second week through the end of the ninth week of classes. Withdrawal after the ninth week of classes is permitted only under extenuating circumstances at the discretion of the instructor."

### **CLASS CANCELLATIONS**

Please visit the Farmingdale State College website (<http://www.farmingdale.edu>) to obtain the latest information on class cancellations or delayed openings.

## **USE OF ELECTRONIC DEVICES**

It is important that you and your classmates not be distracted from learning. The prohibition of cell phones is covered in Article II of the Student Code of Conduct. Any disruption of teaching, which specifically includes the use of cell phones, pagers, or other electronic devices, is considered a Level I violation of Article II of the Student Code of Conduct. Any violation may result in disciplinary action ranging from a warning letter to probation, suspension or dismissal from the College. As such, please turn off and put away these electronic devices prior to your entering the classroom. Laptop computers - if used in class -- are to be used for academic work only, not for recreational means or surfing of the Internet.

## **COURSE CONTENT**

Course material accessed from the Angel website is for the exclusive use of students who are currently enrolled in the course. Content from this system cannot be reused or distributed without written permission of the instructor and/or the copyright holder. Duplication of material protected by copyright, without permission of the copyright holder is a violation of the Federal copyright law, as well as a violation of academic integrity policy.

## **PUBLIC HEALTH LAW**

New York State Public Health Law 2165 requires all students born on or after January 1, 1957 who register for 6 or more credits to prove immunity to Measles, Mumps, and Rubella (MMR). The College will dis-enroll any student who is not in compliance with this law. If there is any doubt about the status of your compliance with Public Health Law 2165, please check with the Health and Wellness Center (631) 420-2009, located behind Memorial Hall.

## **STUDENTS WITH DISABILITIES**

Students who seek accommodations (e.g. extra time for tests, readers, sign-language interpreters) are required to meet with the Director of the Office for Students with Disabilities for review of their special needs and present documentation regarding their disability. For further information, contact the Office for Students with Disabilities at (631) 420-6174/2411. The office is located in Roosevelt Hall, Room 150/151. If you have a documented disability and wish to discuss academic accommodations, please contact me as soon as possible.

## **COMPUTER SYSTEMS DEPARTMENT ACADEMIC INTEGRITY POLICY**

Unless specifically indicated as group or team projects, all assignments are considered individual assignments for which the instructor expects original work submitted by each student. All assignments must comply with the following Computer Systems Department Academic Integrity Policy. We will follow the student code of conduct definitions of Academic Dishonesty, as listed in the Farmingdale State College Student Code of Conduct, as follows:

1. Submitting another person's work with or without that person's knowledge.
2. Copying a computer program or programming code from another source.
3. Purchasing and then submitting programming code.

In addition, the following are also considered to be a breach of the academic integrity policy as it applies to individual assignments:

4. Exchanging computer code and documents by any means.
5. Sharing storage media.
6. Submitting a document file that has been duplicated electronically from another person's work.
7. Collaborating with another person that results in identical or similar work.
8. Intentionally or knowingly helping, attempting to help, or solicit another to commit an act of academic dishonesty.

## **INSTRUCTOR'S COURSE OF ACTION**

**First Offense:** The student (and collaborators, if any) will receive a grade of zero for the assignment and will have his or her final grade reduced by one full letter grade. The infraction will be reported to the student's chairperson, and a letter regarding the infraction will be placed in the student's file.

**Second Offense:** The student receives an "F" in the course and may no longer attend or participate in the course. The infraction will be reported to the student's chairperson and a letter will be placed in the student's file. The instructor will report the incident to the Dean of Students for an academic integrity hearing. A second offense can occur in the same course or in different courses.

Student dishonesty on exams and/or a capstone project will automatically be treated as a second offense. A letter will be placed in the student's file, and the incident will be referred to the Dean of Students for further disciplinary action.

*If a student is unclear about or has questions regarding the academic integrity policy, it is the student's responsibility to ask the professor for clarification of the policy.*