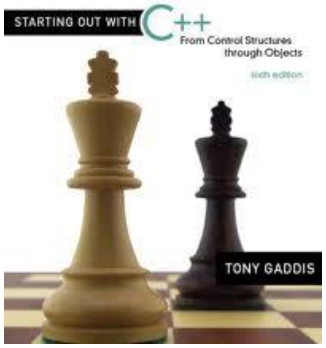
CS 2020 – Fall 2014
Object-oriented Programming

Classroom	114 Hayes Hall
Class time	TR
Prerequisite	CS 2010 grade C or better
Textbook	Gaddis, "Starting Out with C++" Sixth Edition



Instructor	Ron Conway
Office	234 Hayes Hall (Phone: 372-8777)
Office Hours	**Regular hours**: TR (12:00a – 12:50p), (2:30p – 3:50p) **see scheduled by appointment (or ANYTIME with prior notice)**
Websites	http://www.cs.bgsu.edu/rconway
Email	rconway@bgsu.edu
Dept Office	221 Hayes Hall (Phone: 372-2337)

Course Description:

The advanced programming concepts encompass the basic constructs common to almost all programming languages, problem solving techniques and analytical thinking. This course teaches the basics of object-oriented programming in C++ including the essential concepts of objects and classes, pointers, inheritance, and more advanced topics.

This course will require considerable effort in problem analysis and design, coding, testing and debugging C++ programs.

Learning Outcomes:

After successfully completing CS2020 a student should be able to:

- Understand Sorting and Searching algorithms and be able to apply them in C++ programs.
- Understand structs conceptually and be able to apply them in C++ programs.
- Understand pointers conceptually and be able to apply them in C++ programs.
- Understand linked list algorithms and be able to apply them in C++ programs.
- Understand user-defined classes conceptually and be able to apply them in C++ programs.
- Understand operator overloading and be able to apply them in C++ programs.
- Understand inheritance conceptually and be able to create C++ classes using inheritance.
- Understand polymorphism conceptually and be able to create C++ classes using polymorphism.

Class Policies:

Attendance

- Attendance in class is an integral part of the learning process. Students with an excellent attendance record will receive 15 bonus points. The third **excused/unexcused** day will result in a reduction of 7 bonus points. The fourth **excused/unexcused** day will result in the remaining deduction of the bonus points. Subsequent **unexcused/excused** absences after 6 will result in a 7 point deduction from your total points for each day missed after 6 days. This means you get to miss up to 6 day for illness, car trouble, family emergencies, etc. It is the responsibility of late arriving students to notify the instructor **after class** or no later than the **next class** period. Without a timely notification the absence will become irrevocable at the instructor's discretion.

- Any quizzes, labs, homework or classwork missed **cannot** be made up without the instructor's approval,, so attendance is essential. Student who miss class are responsible for all occurrences on missed days. This includes homework assigned. Students are expected to arrive for class and be in their seats by the scheduled beginning of class. Habitually late students will lose their bonus points at the instructor's discretion. Students exhibiting unconstructive academic behavior may also lose bonus points at the instructor's discretion. Unconstructive academic behavior includes but is not limited to sleeping in class, non participation, not having requested materials and leaving class early or frequently.

Grading Policy:

The final grades are assigned based on student performance on assignments and exams, and are ***not negotiable***. Specifically, you will be evaluated on the following:

Possible Points	
Exams	200
Quizzes	75
Programs	125*
CL/HW/LB	70*
Final	125
Total	595

- **Exams**: There will be two exams worth 100 points and one final worth 125 points. All exams are in-class and closed-book.
- **Quizzes**: There will be 4 quizzes worth 25 points each. Quizzes will emphasize recent material covered since the previous quiz or exam. **No** makeup quizzes will be given. The lowest quiz will be dropped.
- **Programs**: There will be **5 – 7** programming assignments worth approximately 125 points*.
- **Homework/Classwork/Labs**: **5-8** These assignments are worth approximately 70 points*. These will involve working on selected problems in the textbook or from the instructor. Assignments may originate from in class labs or exercises and will not be accepted late. **No makeup work will be given.**

(*subject to change)

The final grade for the course will be determined by the total number of points earned divided by the total points overall.

Grade	Points	Percent
A	547	92%
B	488	82%
C	428	72%
D	369	62%
Based On Pts Total		595

Important Dates

Quizzes	(9/11, 9/25 , 11/6, 12/9)
Holiday (No class)	**9/1, 10/9, 10/10, 11/11, 11/26 thru 11/28**
Exams	11/7, 11/20

Checking Grades:

Your grades will be made available upon your request (optionally) on my website. The grade will be posted anonymously by a 4 character code. The address of the webpage is **www.cs.bgsu.edu/rconway/**

Makeup Exams

- There will not be make-up exams except for the most serious of reasons such as confinement in the hospital or other emergencies. Contact the instructor or the department office **immediately** if you will miss an exam. As an example, if your car breaks down without you reporting it to the instructor or the main office before the scheduled exam time, it will not merit a makeup exam. Makeup exam will be given on a later date and may cover **new** material.
- There will be NO make-up quizzes. Your lowest quiz will be dropped. If you miss a quiz, it will be your lowest quiz.
- For other scheduled official events (such as competitions or conferences), discuss the event with the instructor in advance.

Programming Environment

- We will be using BGUnix, Sun Enterprise 450 Server running Solaris 8 (Unix) operating system, for our programming assignments. BGUnix (**bgunix.bgsu.edu**) may be accessed from a home computer, or through telnet from the microcomputer labs on campus.
- Students are free to use their own compilers to develop programs for the class. However, the program must be transferred to BGUnix and the final version must compile and run correctly on BGUnix.

Programming Assignments

- Programs will be graded on correctness, **documentation**, clarity and style. Programs will be collected and executed automatically from your BGUnix class directory at the date and time specified on the assignment. It is the student's responsibility to correctly name the file so that it can be collected. Those files not named correctly will be treated as late assignments. Additionally students may be asked to bring a printed copy of a photo to class. The photo will be based on the instructions given for each assignment.
- Late assignments will be accepted up to 48 hours after the original due date and time. The student must send the instructor an email within the 48 hour time period asking that the late assignment be collected. These programs will receive a 30% penalty. You may submit an assignment after the 48 hour period, however, any assignment submitted after the 48 hour period will be graded at the instructor's discretion.
- Plan to start and finish early. Last minute problems can always be expected when writing programs.

Programming Assistance Available

- In the instructor's office during office hours or by appointment.
- From CS graduate assistants (consultants) who will be available in the Hayes 025. To get the most benefit out of a consulting session:
  - Bring a paper copy of your program (photo file with error messages if there are any.)
  - State clearly the problem you are having and how you have already tried to fix it.
  - If you are still having difficulties after making the suggested changes, attempt to resolve the remaining problem(s) yourself before returning for more consulting.

  A schedule of graduate student consultants is available at:
  http://www.bgsu.edu/departments/compsci/consulting.html
- As much as I like to receive emails, extensive programming questions through email are generally discouraged. Unless the question can be answered briefly, make an appointment to meet with me.

BGNet E-mail

- It is important that you check your **bgnet** email regularly since important information concerning this course will be sent to that email address. (Go to ITS TSC (Hayes 100) to forward your emails.)

Codes of Conduct and Academic Honesty

- The instructor and students in this course will adhere to the University's general Codes of Conduct defined in the *BGSU Student Handbook*. Specifically, the Code of Academic Conduct (Academic Honesty Policy) requires that students do not cheat, fabricate, plagiarize or facilitate academic dishonesty. For details, refer to:

  - *BGSU Student Handbook* (http://www.bgsu.edu/offices/sa/book/Student_Handbook.pdf)
  - *The Academic Charter*, B.II.H (http://www.bgsu.edu/downloads/file921.pdf)
  - Student Discipline Programs (http://www.bgsu.edu/offices/sa/judicial/academic/index.html)
  - CS Dept Policy (http://www.bgsu.edu/departments/compsci/policies/honesty.html)

- Programming and other assignments are meant to be individual assignments. While a certain amount of collaboration is expected and encouraged, there is a fine line between collaboration and cheating. Collaboration should be use to find bugs in programs or to solve program syntax or general structure problems. This does NOT include duplication of programs or designs. Copying of code, regardless of the number of editor changes, renaming, and/or retyping is considered cheating, and a student's inability to describe the function of an assignment will be considered clear evidence of cheating. Providing another student with part or all of a solution is also clearly cheating.
- Cheating will result in failing the course, along with possible expulsion from the University. Any student suspected of cheating on an exam will be asked to turn in the exam immediately and/or will be reported to the University.

Disability Policy

- In accordance with the University policy, if the student has a documented disability and requires accommodations to obtain equal access in this course, he or she should contact the instructor at the beginning of the semester and make this need known. Students with disabilities must verify their eligibility through the Office of Disability Services for Students, 413 South Hall, 419-372-8495. (http://www.bgsu.edu/offices/sa/disability/index.html)

Religious Holidays

- It is the policy of the University to make every reasonable effort allowing students to observe their religious holidays without academic penalty. In such cases, it is the obligation of the student to provide the instructor with reasonable notice of the dates of religious holidays on which he or she will be absent. Absence from classes or examinations for religious reasons does not relieve the student of responsibility for completing required work missed. Following the necessary notification, the student should consult with the instructor to determine what appropriate alternative opportunity will be provided, allowing the student to fully complete his or her academic responsibilities. (As stated in *The Academic Charter*, B-II.G-4.b at: http://www.bgsu.edu/downloads/file919.pdf)

Electronic Devices

- Students are not authorized to make recordings during class without permission from the instructor.
- Electronic device may be used for class activities **only**.

Reading

Arrays	Chapter 7
Intro To Unix	Handouts
Searching and Sorting: (linear search, binary search, bubble sort, selection sort)	Chapter 8
Structured Data	Chapter 11
Pointers	Chapter 9
Linked Lists	Handouts (Chapter 17)
File Operations	Chapter 12
Classes	Chapter 13
More About Classes	Chapter 14
Polymorphism, Virtual Functions, and Multiple Inheritance	Chapter 15

Caveat: The above schedule, procedures and points in this course are subject to change in the event of extenuating circumstances.