Course F

Course Prerequisites

2) Required Material

Programming is applicable to computer science, game development, systems programming, iOS app development, database programming, etc. Although programming is a skill best “learned by doing”, requiring considerable practice in: understanding a problem, following specific directions, designing a detailed solution, implementing that algorithm in Java code, testing and debugging the program. Lectures, lab exercises, homework assignments and exams all involve programs/programming.

The lecture, assigned readings and program documentation will introduce new programming/language concepts using example programs which will be reviewed and run during lecture. Students should bring their own laptop to lecture to download/run the examples along with the instructor.

The labs (and sometimes the end part of lecture) will have students writing programs and completing partially-written programs to practice concepts shown in lecture, in preparation for using them for doing assignments.

The 7 programming assignments will be explained in lab, with students starting the design of the solution during lab, making sure they understand how to implement the programs. Assignments will be completed as homework done outside of lab.

Assignments will have a 1½ to 2-week submission deadlines from when they're given out, allowing students to get further help during the next week’s lab as well. Submission is through E-Learning – which must be done before the due date/time.

There’ll be 3 exams (1 in lab, 2 in lecture), which involve writing/testing a program during the allotted time. These must be submitted to E-Learning before leaving class, before the specified submission time. Allowable resources for use during exams will be specified.

Amount of Work Required

- This course requires a significant amount of out-of-class work for finishing assignments and programming exercises and for reading/reviewing material for lecture. Just attending lectures and labs is not sufficient to pass the class. If you don’t have the time or commitment to do the necessary work, drop the class rather than fail the class.

- Learning to program is a cumulative effort. If you don’t keep up with the new concepts every week, it’s very difficult to catch up later. Again, if you don’t have the time to devote to the class EVERY WEEK, drop the class rather than fail the class.

Course Communication

- WMU E-Learning for posted assignments & due dates, submitting completed assignments & exams, for grade-tracking & other lab communication,

- Course website, www.cs.wmich.edu/~rhardin, for prep-material for lectures (things to read in textbook, summaries by instructor, links to online websites), code demos used in lecture, programming tasks for in-lab exercises, course admin material, help/tutoring resources, etc.

- E-mail to students’ @wmich address for announcements, changes to assignment specs or due dates, instructor absence, etc. NOTE: When emailing the instructor/TA, always use @wmich account, start subject with “CS1110” followed by a descriptive subject – otherwise there probably won’t be a timely response.

Course Objectives/Outcomes

Students completing CS1110 with a grade “C” or better should be able to:

1) consistently follow a problem-solving process;
2) understand problem, design solution, implement code & test problem-solving, and implement algorithms to solve simple problems;
   o define, recognize, design, and implement algorithms (using pseudo code)
3) understand and use basic concepts of high-level language procedural programming;
   o variable declarations, main controller module, assignment-statements, I/O using console, windows & files, control structures including selection, looping and method calling, modular programming including parameter passing;
4) understand and use basic concepts of OOP (object-oriented programming);
5) consistently document programs effectively and efficiently;
   o program/module top-comments, self-documenting code, side-comments as appropriate, commenting as algorithm design, use of white space, align/indent to show code logic
6) understand and use basic components of an integrated development environment (IDE);
   o context-sensitive editor, build/compile, execute
7) know the basic phases of the software life cycle & software development cycle;
   o requirements, design, code & debug, test, maintenance
8) know basic introductory searching and sorting algorithms;
   o linear & binary search, selection & insertion sort;
9) gain an elementary understanding of algorithm complexity;
   o big O Notation

**Final Grade**

100 pts - exam #1 (programming project)
100 pts - exam #2 (programming project)
150 pts - exam #3 (programming project)
700 pts - 7 programming assignments (started in lab, finished as homework) 100 pts each
120 pts - in-lab exercises (10 pts/lab) -
   o demo them in lab for your instructor

**NOTE:** Instructor may adjust requirements and relative point-distribution should unforeseen circumstances arise during the semester.

Final grade for the course based on the following (for the course as %):

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100%</td>
</tr>
<tr>
<td>B</td>
<td>80-84%</td>
</tr>
<tr>
<td>C</td>
<td>70-74%</td>
</tr>
<tr>
<td>BA</td>
<td>85-89%</td>
</tr>
<tr>
<td>B</td>
<td>60-64%</td>
</tr>
<tr>
<td>CB</td>
<td>75-79%</td>
</tr>
<tr>
<td>DC</td>
<td>65-69%</td>
</tr>
<tr>
<td>D</td>
<td>0-59%</td>
</tr>
</tbody>
</table>

**NOTE:** To proceed to CS1120 (required for CS majors, CS minors & CompEng major) a student needs at least a “C” grade in CS1110 since it’s a prerequisite course.

**Attendance**

You’re expected to attend every lecture and all of your weekly labs, arrive on-time, stay the whole class period and be attentive and actively participate in the in-class activities. Lateness, early departure and non-participation will be considered as absences.

**Course Etiquette**

You’ll have a computer in front of you during lecture and lab. However, once class starts, you may only use it to work on the specified CS1110 tasks for that day. Once class starts there must be NO: web surfing, texting, checking email/FaceBook/..., posting, watching videos, playing games, working on other classes, working on CS1110 assignments (except as specified in lab), etc. Such activities are counter-productive to learning, rude and distracting to the instructor and fellow students. You will be asked to leave the class if you do not show appropriate behavior in class.

You are expected to come to class on time, stay for the entire class period, not take bathroom/phone/food breaks in the middle of class, be attentive when the instructor presents material, follow instructions as to the activities to work on at that time, etc. No eating or drinking in class. No headphones. Turn off your cell phone.

**Programming Assignments (in lab & homework)**

Specs and due dates for the assignments will be posted on E-Learning and discussed in lab. You’ll start the planning/design work on assignments in lab, but will need to do the majority of the program development and testing as homework on your own.

**ALL WORK ON PROGRAMMING ASSIGNMENTS MUST BE DONE ON YOUR OWN.** Working together with another student, getting significant help from anyone else (whether they’re in the class or from outside), sharing your work with someone else – are all considered as “academic dishonesty” and will be penalized/reported as such. (See below). The penalty for academic dishonesty may be a failing grade for the whole course.

Allow enough time to complete assignments prior to the due date - and assume there’ll be unexpected problems and bugs to sort out. Schedule your work to allow time to get help, if needed, during lab instructors’/tutor’s available hours (see course website for their days/times – to be posted soon). You may get help from:
- your lab instructor during your weekly lab session
- your lab instructor during his/her office hours
- one of the other lab instructors during his/her office hours
- the CS tutor at Student Success Centers, (a dorm), evenings on main campus

Lab instructors and the CS tutor do NOT handle your programming problems and debugging issues via email – this must be done in person.

**Assignment Submission & Due Dates/Times**

A .cpp file of your completed project must be uploaded to E-Learning prior to the specified due date/time (posted on E-Learning). Lab instructors will explain the submissions procedure. Assignments will NOT BE ACCEPTED VIA EMAIL – and they will NOT BE ACCEPTED LATE (except under extreme, valid, documented circumstances).

**Programming Assignments – Grading**

Programming assignments will be graded by your lab instructor. Correct output, formatted as described in the specs, is of primary concern. But also, you’ll lose points for not using the specified programming concepts in the code and/or appropriate coding style/format. NO POINTS will be given for a program that doesn’t “build” (compile), a program that crashes before solving any of the problem, or a program that produces no viewable output.

(Assignment grades are not compensation for the amount of work put into a project).

So use incremental development to facilitate completing a program, to help identify and fix bugs, and to help get at least partial credit for a project, if it’s not fully completed. That is, always keep the program in a working state which produces SOME grade-able output. Then add code to that working code to accomplish the next sub-goal,
compile and run it, and re-check the output. Then if you find a bug, it’s likely caused by the code you just recently added.

**Exams**
The 3 exams must be done **COMPLETELY ON YOUR OWN** without help from anyone (using any form of communication). Allowable resources include the textbook, course website, Java docs and other material specified by your instructor before the exam. The instructor/TAs can not give programming help during the exam. No bathroom (or other) breaks are allowed during an exam. Exams are cumulative and include concepts covered in the readings, course website examples, lab/lecture exercises, assignments, lectures, etc. Exam dates are posted on the course website, and are subject to change if issues arise during the semester.

Exams will have you develop a complete working program, according to written specs, possibly from a starter project provided by your instructor, using NetBeans. You must submit the .zip project to your lab’s E-Learning Dropbox before the deadline, before leaving class. Exam1 is in lab, using the lab computers. Exam2 & Exam3 are in lecture – using YOUR OWN laptop.

Missing an exam will result in a 0 for that score. If an emergency arises causing you to miss an exam AND you have sufficient documentation of the situation, then alternative arrangements may be made for determining how to accommodate the missing score.

If you violate WMU academic honesty policies while taking an exam, the situation will be handled according to the WMU Academic Integrity statement (see below). The penalty for academic dishonesty may be a failing grade for the whole course.

**Incomplete (I) Grade Policy**
A grade of “I” (Incomplete) can be given ONLY IF
1) you could not complete the course due to a situation outside your control,
2) AND you provide WRITTEN documentation of the situation in a timely fashion,
3) AND you had a passing grade at the time you requested the incomplete grade,
4) AND the work remaining to be completed is minimal.

It can NOT be used as a replacement for a low or failing grade.

**Disability Services for Students (DSS)**
Both in compliance with and in the spirit of the Americans with Disabilities Act (ADA), we would like to work with you if you have a disability that is relevant to your work in this class. If you have a documented disability and wish to discuss academic accommodations, please contact your instructor in a timely fashion with your DSS verification card. You may also contact the Office of Disability Services for Students if you need to register with the DSS office, 269-387-2116 (or at www.wmich.edu/disabilityservices).

**Academic Integrity**
[See WMU Policy below] Further clarification:

- **EXAMS** must all be done **COMPLETELY ON YOUR OWN**, using only the resources allowed (as stated by your instructor) – no communication with anyone (using any form of communication) is permitted.
- Programming **EXERCISES** done in lab and in some lectures may be done in pairs.

- **ASSIGNMENTS** must all be done **COMPLETELY ON YOUR OWN**. You are NOT allowed to work together, to get significant help from other people or from online resources, to share your program with other students, to look at other student’s work or let them look at yours, etc. – that would be considered plagiarism or complicity. [Don’t share your files in any form !!]. Plagiarism detection software may be used.

- For **ASSIGNMENTS**, you may, however,
  - use code from: the textbook, class exercises (that you wrote), the course website examples – but any significant chunk of code developed by someone other than you should be clearly attributed in a comment in the code.
  - get help from your (or the other) lab instructor or the CS tutor at Student Success Centers
  - VERBALLY discuss a problem or its solution with other students in class, but when pencil hits paper, or fingers hit keyboards, you MUST work on your own.

**WMU Academic Honesty Policy**
Students are responsible for making themselves aware of and understanding the University policies and procedures that pertain to Academic Honesty. These policies include cheating, fabrication, falsification and forgery, multiple submission, plagiarism, complicity and computer misuse. The academic policies addressing Student Rights and Responsibilities can be found in the Undergraduate Catalog at [http://catalog.wmich.edu/content.php?catoid=24&navoid=974](http://catalog.wmich.edu/content.php?catoid=24&navoid=974). If there is reason to believe you have been involved in academic dishonesty, you will be referred to the Office of Student Conduct. You will be given the opportunity to review the charge(s) and if you believe you are not responsible, you will have the opportunity for a hearing. You should consult with your instructor if you are uncertain about an issue of academic honesty prior to the submission of an assignment or test.

**WMU Sexual Misconduct Policy**
Students and instructors are responsible for making themselves aware of and abiding by the “Western Michigan University Sexual and Gender-Based Harassment and Violence, Intimate Partner Violence, and Stalking Policy and Procedures” related to prohibited sexual misconduct under Title IX, the Clery Act and the Violence Against Women Act (VAWA) and Campus Safe. Under this policy, responsible employees (including instructors) are required to report claims of sexual misconduct to the Title IX Coordinator or designee (located in the Office of Institutional Equity). Responsible employees are not confidential resources. For a complete list of resources and more information about the policy see [www.wmich.edu/sexualmisconduct](http://www.wmich.edu/sexualmisconduct).

**WMU Other Policies**
In addition, students are encouraged to access the Code of Conduct, as well as resources and general academic policies on such issues as diversity, religious observance, and student disabilities:
- Office of Student Conduct [www.wmich.edu/conduct](http://www.wmich.edu/conduct)
- Division of Student Affairs [www.wmich.edu/students/diversity](http://www.wmich.edu/students/diversity)
- University Relations Office [www.wmich.edu/policies/religious-observances-policy](http://www.wmich.edu/policies/religious-observances-policy)