Syllabus
CMP 112 Section J
Computational Thinking I
M 6 pm – 9:35 pm
New Hall TC13
4 credits
Spring 2017

Instructor: Jeff Thorson
Office: M New Hall TC13 5:30pm or by appointment
Phone: NA
E-Mail: jthorson@carrollu.edu

Prerequisites: College Algebra (MAT 101) or placement recommendation

Textbooks: A First Course in Computational Thinking, by Symms, et. al. (Required)

Schedule: We will cover the book in chapter order.

Grading: Homework (40%), Quiz Average (20%), Midterm (20%), Final Exam (20%)

Grade Scale:

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Final Exam: Last Scheduled Class

Course Overview:

The purpose of this course is to introduce students to mathematical and computational techniques useful in the health, natural, and social sciences. The focus will be on basic statistics and computer interaction, both graphical and textual. Students will gain a basis for developing strong 21st century job skills.

Course Objectives:

This course will introduce students to
1. Some essential elements of computational thinking
2. Basic statistical analysis concepts
3. Essential computer literacy skills

Learning Outcomes: (assessment will be conducted via homework, quizzes, and exams)

By the end of this course, students should be able to:

- Use a computer to solve equations. (Obj 1, 3)
- Use a computer to optimize functions. (Obj 1, 3)
- Make the connection between real-world processes and their corresponding mathematical models. (Obj 2)
- Analyze data using both linear and non-linear regression models. (Obj 1-3)
- Design and use probabilistic models to simulate stochastic processes. (Obj 1-3)
- Create and interpret appropriate visualizations of data sets. (Obj 1-3)
- Analyze data sets using descriptive statistics and basic inferential statistics. (Obj 2)
• Communicate with a computer using both graphical and text interfaces. (Obj 1, 3)

**Course Policies:**

**Academic Integrity:** All work on assignments, quizzes and tests is expected to be your own and represent your ability in course content. The Carroll University Academic Integrity Policy is located in your student handbook. Please familiarize yourself with this policy. If a student violates this policy in any way, the instructor or College reserves the right to impose a sanction of failure on the assignments/assessment or failure in the course.

**Attendance:** It is expected that you attend every class meeting. Some of the course material will only be available in class as part of class discussion. You will be held accountable for all material covered in class with no exceptions. A lot of your homework grade will be determined by in-class projects and quizzes. Unexcused absences will result in a score of zero for those assignments.

**Homework:** Homework based on lecture material and readings from the book will be assigned regularly. Late homework will not be accepted without a valid medical excuse or prior arrangements. Failure to submit homework in a timely manner will result in forfeiture of credit for that assignment.

**Tests:** There will be one midterm test and a final exam. Each test should be considered cumulative. Tests will include questions concerning concepts as well as practical application of skills.

**Quizzes:** There will be occasional reading quizzes to encourage pre-reading of material. These will be assigned through LMS and must be completed before class on the day they are due.

**Carroll Portal (LMS):** This class will use the Carroll Portal for various purposes. Homework descriptions and data files will be posted there as needed. Your grades will be posted there when available. Please keep track of your grades yourself as well, and if you notice any errors, please let your instructor know as soon as possible.

**Computer Policy:** This class is being held in a computer classroom. It is expected that all computer use be class-related. Chat programs, email, games, social media interaction, and unrelated browsing are not to be used during class. Student screens can be seen from the main terminal, and students observed breaking this rule will be asked to leave and marked absent for the day. Note that cell phones, iPods, etc. are all small computers, so this rule applies to them as well.

**Accommodation for Disabilities:** If you need accommodations for a documented disability, or are considering obtaining documentation, you should make an appointment with Martha Bledsoe, our disabilities coordinator, no later than the first week of class. She can be reached by calling 262-524-7335 or contacting her via e-mail at wyc@carrollu.edu. It is your responsibility to get any paperwork turned in to your instructor as soon as possible so that they are able to make the required accommodations.

*The instructor and the University reserve the right to modify, amend, or change the syllabus, course requirements, grading policy, etc., as needed. Students will be notified of any changes during the lecture periods.*