

# CMSC 121: Introduction to Computer Science (3 credits) Spring 2018

**Instructor:** Robert Marmorstein, 395-2185, marmorsteinrm@longwood.edu

**Course Web Site:** <http://narnia.homeunix.com/~robert/Spring2018/121.html>

**Section 1:** 10:00am-10:50am MWF, Ruffner 356

**Section 2:** 1:00pm - 1:50pm MWF, Ruffner 356

**Office Hours:** 2:00pm-2:50pm MWF, 12:30pm-1:45pm TR, or by appointment (Ruffner 329)

**Course Description:** An introduction to computer science for non-specialists. Basic computer architecture and design, storage formats, principles of computer operation, and algorithms. Application software that uses the computer as a tool.

**Course Objectives:** The student will be able to:

- Describe the parts of a computer system and how they interact
- Convert numbers to various binary computer representations
- Create an expression in Boolean algebra for a digital circuit
- Execute simple algorithms by hand and understand the limitations of algorithms

**Textbook:** There will be no textbook for this course. We will, instead, use a series of worksheets that I will hand out in class. If you are unable to attend a lecture, you will need to retrieve the handouts and notes from me during office hours or by e-mail.

**Course Requirements:** Your grade will depend on your successful completion of the midterm exam (worth 20% of your grade), final exam (20%), homework and quizzes (40%), and participation (5%). The remaining 15% of your grade will come from successful completion of a five page semester paper which will be assigned at the beginning of the semester. An outline of your paper will be due the third week of classes. Your first draft will be due by week six and the final draft will be due at the end of week nine.

**Grading Policy:** Late work will not be accepted unless you have a medical condition or family emergency which prevents you from completing the assignment on time. In such circumstances, you do not need a doctor's note, but you must notify me by e-mail within a reasonable period of time after the due date (typically within 12 hours).

**Grading Scale:** A: 91-100, A-: 90, B+: 89, B: 81-88, B-: 80, C+: 79, C: 71-78, C-: 70, D+: 69, D: 64-68, F: 63 and below (note that there is no grade of D- in this course).

**Attendance:** I expect you to attend class unless you are sick or engaged in a school sponsored sports event or extra-curricular activity. I will primarily rely on your honor to enforce the attendance policy, but may keep a record of absences in accordance with Longwood policy. In accordance with that policy, missing more than 10% of scheduled class time to unexcused absences may result in loss of one letter grade. Missing more than 25% of class (whether excused or unexcused absences) may result in a failing grade.

**Food and Drink:** I would prefer that you do not eat in class (it distracts me and the other students). You MAY bring non-alcoholic beverages to class. Violations of this policy will be considered an unexcused absence. I occasionally make exceptions to this rule for students

who would otherwise miss lunch. If you feel that you need such an exception, you **MUST** make arrangements with me before you bring food to class.

**Cell Phones and Laptops:** Cell phones and laptops must be turned off and put away during lecture, unless specifically requested by the instructor. Violations of this policy will be considered an unexcused absence and may incur a grade penalty.

**Collaboration:** You may freely discuss homework problems with other students *as long as you write down (or type) your own answers in your own words and give credit to those with whom you have collaborated.* Tests and quizzes must be completed entirely on your own. All tests and quizzes will be taken closed-book and closed-notes.

Infractions of this policy will be dealt with under the Longwood Honor Code. A student convicted of an Honor Code offense involving this class will receive a grade of F for the course in addition to any penalties imposed by the Honor board. *You should consider all work in this class to be pledged work.*

### **Tentative Course Schedule:**

Week 1: Jan 17-19	Introduction, Order of Operations
Week 2: Jan 22-26	Spreadsheets and Recursion,
Week 3: Jan 29-Feb 2	Functions and Decisions <b><u>Paper Outline Due</u></b>
Week 4: Feb 5-9	Hardware: Units and Components
Week 5: Feb 12-16	Circuits and Digital Logic, Truth Tables
Week 6: Feb 19-23	Laws of Logic, Sum of Products, Karnaugh Maps <b><u>First Draft Due</u></b>
Week 7: Feb 26-Mar 2	Midterm Review, <b>Midterm Exam</b>
<b>Mar 5-9</b>	<b>Holiday -- No Classes</b>
Week 8: Mar 12-16	Algorithms and Programming, Cryptography: Codes and Ciphers
Week 9: Mar 19-23	Binary and Decimal Numbers, ASCII, Hexadecimal
Week 10: Mar 26-30	Two's Complement Numbers <b><u>Final Draft Due</u></b>
Week 11: Apr 2-6	IEEE Floating Point Numbers
Week 12: Apr 9-13	File Compression
Week 13: Apr 16-20	Error Correcting Codes
Week 14: Apr 23-27	Final Review and Catchup
<b>May 7 (Mon)</b>	<b>Section 2 FINAL EXAM (3:00pm-5:30pm)</b>
<b>May 9 (Wed)</b>	<b>Section 1 FINAL EXAM (3:00pm-5:30pm)</b>