Course Prerequisites: MAC 1105
Class Meets: Tuesday & Thursday from 7:30 am - 8:40 am in BA 107

Course Objectives:
This course is designed to provide an introduction to the field of computing. The central concept that underlies computer science is the algorithm and thus algorithms will be the primary focus of the course. The lecture section of the course will focus on the conceptual tools necessary for constructing and analyzing algorithms, the lab sections will focus on the implementation of algorithms using a programming language. Essential algorithmic concepts and techniques are introduced in this course that will remain valid throughout your studies of computer science.

Text: The following text is required:
The text will be supplemented with notes that I will provide for you via the course web site.

Academic Dishonesty
Cheating on examinations or other serious forms of academic dishonesty will result in a grade of "F" (and a required report to University officials). Persons "borrowing" someone else's work on an assignment will receive a zero on that assignment if it is the first offense. A second offense will be considered a serious form of academic dishonesty. (Borrowing is equally subject to penalties.) You are not expected to work in isolation on assignments. Significant learning frequently takes place in the interchange of ideas with one another. In the final analysis, however, your response to an assignment must be your own, not someone else's.

Grading:
• Exams are given once – be there as there are no dropped test scores. Three exams will be given, two regular exams and a cumulative final exam.
• Programming assignments will be an integral part of the course.
• Tests are closed book and notes.
• Calculators of any sort are not allowed on exams.
• Make-up quizzes and exams are given only in the event of extreme circumstances beyond the student’s control and are given at the discretion of the instructor.
• Late assignments will receive a 25% deduction from the score it would have received had it been submitted on time. The last assignment may not be submitted late.

Exam #1 (February 10th) ..................................................................................................................20%
Exam #2 (March 18th) ......................................................................................................................20%
Final Exam (Thursday April 22nd 7:00-9:50am) ...........................................................................25%
Programming Assignments (total of 5 or 6) .................................................................................25%
Pop Quizzes in Recitation Labs .......................................................................................................10%

Grading Scale:
    Plus/minus grading will be used in this course.

Some Important Dates:
    No class: Tuesday March 9th or Thursday March 11th – Spring Break
    Last Day to Withdraw: Friday February 27th
    Final Exam: Thursday April 22nd 7:00-9:50am

Topics To Be Covered:

2. Brief Review of C: Functions, pointers, files
3. Arrays
4. Recursion
5. Algorithmic Complexity: Big-Oh
6. Searching and Sorting
7. Stacks and Queues
8. Binary Trees
9. Graphs
### Tentative Schedule of Lecture and Recitation Topics:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Reading from Text</th>
<th>Lab Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/5-1/9</td>
<td>Intro and C review</td>
<td>1.1-1.6</td>
<td>NO LAB</td>
</tr>
<tr>
<td>1/12-1/16</td>
<td>Pointers</td>
<td>2.1-2.3</td>
<td>C libraries</td>
</tr>
<tr>
<td>1/20-1/23</td>
<td>Records &amp; Arrays</td>
<td>2.4-2.7</td>
<td>binary numbers</td>
</tr>
<tr>
<td>1/26-1/30</td>
<td>Recursion</td>
<td>4.1-4.5</td>
<td>logs</td>
</tr>
<tr>
<td>2/2-2/6</td>
<td>More Recursion</td>
<td>5.1-5.3</td>
<td>exam review</td>
</tr>
<tr>
<td>2/9-2/13</td>
<td>Exam #1 (2/10)</td>
<td>7.1-7.4</td>
<td>go over exam</td>
</tr>
<tr>
<td></td>
<td>Algorithm Analysis</td>
<td></td>
<td></td>
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<tr>
<td>2/16-2/20</td>
<td>Sorting</td>
<td>7.5</td>
<td>summations</td>
</tr>
<tr>
<td>2/23-2/27</td>
<td>Stacks</td>
<td>8.1-8.5, 10.1</td>
<td>summations</td>
</tr>
<tr>
<td>3/1-3/5</td>
<td>Queues</td>
<td>10.2-10.3</td>
<td>exam review</td>
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<tr>
<td>3/15-3/19</td>
<td>Stack/Queue Apps</td>
<td>None</td>
<td>go over exam</td>
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<tr>
<td></td>
<td>Exam #2 (3/18)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/29-4/2</td>
<td>Expression Trees</td>
<td>14.1-14.3</td>
<td>balanced trees</td>
</tr>
<tr>
<td>4/5-4/9</td>
<td>Expression Trees</td>
<td>14.4-14.5</td>
<td>balanced trees</td>
</tr>
<tr>
<td>4/12-4/16</td>
<td>Graphs</td>
<td>16.1-16.3</td>
<td>exam review</td>
</tr>
<tr>
<td>4/20-26</td>
<td>FINAL EXAM (4/26)</td>
<td>None</td>
<td>None</td>
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**Recitation Labs:**

You are required to attend one recitation lab per week. This semester these labs are on Friday. The topic for each week’s lab is shown in the table above. Quizzes are given in the lab sections not in the lecture section. Lab instructors will also have office hours during which they can assist you with your course assignments. Their office hours will be posted on the course website once they become available.

**Lab Sections:**

- Section 11 – 7:30-8:20am – ENG 227
- Section 12 – 8:30-9:20am – ENG 383
- Section 13 – 8:30-9:20am – ENG 227
- Section 14 – 8:30-9:20am – ENG 302
- Section 15 – 9:30-10:20am – ENG 227
- Section 16 – 1:30-2:20pm – ENG 227
- Section 17 – 2:30-3:30pm – ENG 227
- Section 18 – 3:30-4:20pm – ENG 227