Meeting Room: 208 Boyd GSRC
Meeting Hours: 1:25 – 2:15 (MWF)

Instructor: Delaram Yazdansepas
Office: Boyd GSRC 223a
Email: delaram@cs.uga.edu
Office Hours: Mondays 2:30 – 3:30
                      Wednesdays 11:15 – 12:15

Teaching Assistant (TA): Bhargabi Chakrabarti
TA Office Hours: Mondays 11:20 – 12:20
                      Wednesdays 10:15 – 11:15
TA Office: Boyd GSRC 219c
TA email: bhargabi@uga.edu

COURSE DESCRIPTION
This course presents a survey of the fundamental mathematical tools used in computer engineering: sets, relations, and functions; propositional and predicate logic; proof writing strategies such as direct, contradiction and induction; summations and recurrences; counting and discrete probability; undirected and directed graphs with applications in computer engineering.

COURSE OBJECTIVES
At the end of the semester, all students should be able to do the following:
1. Build truth tables for propositional expressions.
2. Prove properties using a variety of proof strategies including direct proofs, proofs by contradiction, proofs by cases and inductive proofs.
3. Convert a number from one base to another (e.g., from decimal to binary).
4. Perform arithmetic operations on binary numbers.
5. Use permutations and combinations to count the number of elements in large sets.
6. Apply the pigeonhole principle.
7. Determine conditional probabilities.
8. Determine if a function is an injection, a surjection, a bijection or none of these.
9. Use bijections to prove if a given set is countable.
10. Use diagonalization to prove a given set is uncountable.
11. Given an equivalence relation R over a domain D, partition D into subsets (equivalence classes) according to R.

PREREQUISITES: MATH 1113 (Precalculus)

REQUIRED TEXTBOOK:

COURSE WEBSITE:
Certain course materials, including student grades, will be posted to the course's eLearning Commons (new eLC) website: https://uga.view.usg.edu/.

LECTURES:
Lectures will cover material from chapters 1-10 and 12 of the book however not all material from the chapters will be covered. In class activities and exams will take place during lecture periods.
HOMEWORK:
Written homework will be assigned approximately every two weeks. All assignments must be written independently. The assignments for this class can be found on the course homepage. Students must submit both soft copy and hard copy of their homework. Soft copies should be uploaded on eLC and hard copies should be handed in class on due date. Late submissions will be accepted up to 24 hours after the due date only in printed version. However, 15 points will be deducted from the assignment’s grade.

EXAMS:
There will be 3 in-class exams and a separate Final exam. Tests will be closed books and closed notes. The tentative dates for each are given below.

- In-class Exam 1: February 7th
- In-class Exam 2: March 7th
- In-class Exam 3: April 11th
- Final Exam: May 5th, 2014, 12:00 -3:00pm

REGRADING:
With the exception of the final exam and in class activities, students may request a reevaluation of any exam or graded assignment. In order to be considered, however, the request must be made no more than 7 days after the graded material has been returned to the class.

GRADING:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Attendance (in class activities)</td>
<td>8%</td>
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<tr>
<td>Homework</td>
<td>22%</td>
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<tr>
<td>Exam 1</td>
<td>13%</td>
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<tr>
<td>Exam 2</td>
<td>13%</td>
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<tr>
<td>Exam 3</td>
<td>14%</td>
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<tr>
<td>Final Exam</td>
<td>30%</td>
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Final letter grades will be determined according to the following scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score</th>
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<tbody>
<tr>
<td>A</td>
<td>90+</td>
</tr>
<tr>
<td>A-</td>
<td>89+</td>
</tr>
<tr>
<td>B+</td>
<td>87+</td>
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<tr>
<td>B</td>
<td>80+</td>
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<tr>
<td>B-</td>
<td>79+</td>
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<td>C+</td>
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<td>C-</td>
<td>69+</td>
</tr>
<tr>
<td>D</td>
<td>60+</td>
</tr>
<tr>
<td>F</td>
<td>59</td>
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</tbody>
</table>

Individual assignments will not be curved, however the final grade may be curved. Under no circumstances will this lower a student's grade.

ELECTRONIC DEVICES:
Please silent your devices before class. Do not text or play games during class. Laptops and tablets may be used only for class activities, if you use your laptop in such a way that it distracts others (i.e. play games), you will be asked to leave the classroom.

ACADEMIC HONESTY:
All academic work must meet the standards contained in, “A Culture of Honesty,” and the Student Honor Code. Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to the instructor.

ACCOMODATIONS:
Students who require accommodations based on a disability of any kind should follow the procedures outlined by the UGA Disability Resource Center and make an appointment with the instructor as soon as possible.

*This syllabus may be amended as needed.