Course Syllabus ~ Spring 2014

COURSE NUMBER:  CSC 250

COURSE TITLE:  Foundations of Computer Science I

CREDITS:  3.0

PREREQUISITES/COREQUISITES: Students must either have
- Grade of at least C (2.0) in CSC 130, or
- special permission of instructor.

This course is a required course for Computer Science majors. The choice of topics, and the depth
and breadth of coverage, is intended to provide students with the foundations needed to
successfully complete courses at the upper division level in the computer science undergraduate
program.

INSTRUCTOR INFORMATION: Instructor: Mark Armstrong
Office: 153 Petty  Office telephone: 256-1127  Email: mvarmstr@uncg.edu
Office hours: Mondays through Thursdays 10am – 11am. Additional hours are available by
appointment.

CATALOG DESCRIPTION: This course provides an introduction to the fundamental ideas
underlying contemporary computer science with a focus on the computation and construction of
objects.

STUDENT LEARNING OUTCOMES: Upon successful completion of this course, a student
should be able to:
- recognize the tools and techniques that are necessary to practice the art and science of
  computing
- select suitable techniques to prove statements
- describe the main ideas covered in each topic
- use knowledge of and solve problems related to discrete structures, logic, and
  computability
- analyze algorithms

More specifically, a student should be able to:
- construct simple mathematical proofs,
- apply knowledge of set theory, properties of functions, and relations,
- utilize construction techniques for inductively defined sets and recursively defined sets,
  and
- analyze algorithm complexity, including counting techniques.

COURSE DELIVERY: This course will consist of 2 - 75 minute lectures per week. Class lectures
will be interactive and students will be expected to participate in class discussions.

GRADING: The student’s grade will be determined using the following scale.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework Assignments</td>
<td>30%</td>
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<tr>
<td>Periodic Quizzes</td>
<td>10%</td>
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<tr>
<td>2 In-class Written Tests</td>
<td>40%</td>
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<tr>
<td>Cumulative Final Exam</td>
<td>20%</td>
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Final letter grades will be distributed as follows:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>97 - 100</td>
<td>A+</td>
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<tr>
<td>93 - 97</td>
<td>A</td>
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<tr>
<td>90 - 92</td>
<td>A-</td>
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<tr>
<td>87 - 89</td>
<td>B+</td>
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<tr>
<td>83 - 86</td>
<td>B</td>
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<tr>
<td>80 - 82</td>
<td>B-</td>
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<tr>
<td>77 - 79</td>
<td>C+</td>
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<tr>
<td>73 - 76</td>
<td>C</td>
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<tr>
<td>70 - 72</td>
<td>C-</td>
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<tr>
<td>67 - 69</td>
<td>D+</td>
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<tr>
<td>63 - 66</td>
<td>D</td>
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<tr>
<td>60 - 62</td>
<td>D-</td>
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<tr>
<td>0 - 59</td>
<td>F</td>
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</tbody>
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REQUIRED TEXTS/READINGS/REFERENCES:
- Discrete Structures, Logic, and Computability
  3rd edition (Feb 26, 2009)
  by James L. Hein
  Jones & Bartlett Publishers
  **BRING YOUR TEXT TO CLASS EACH DAY.**

TOPICAL OUTLINE:
- Proofs and Techniques
- Sets
- Ordered Structures - Tuples, Lists, Strings, Relations
- Graphs and Trees
- Functions
- Construction Techniques
- Recursive Functions
- Binary Relations
- Inductive Proof
- Algorithm Analysis
- Closed Forms
- Permutations and Combinations
- Solving Recurrences

ACADEMIC INTEGRITY: Each student is required to sign the Academic Integrity Policy on all major work submitted for the course. Refer to UNCG Undergraduate Bulletin. All student work must include the statement, “I have abided by the UNCG Academic Integrity Policy on this work.” Followed by the student name. Work turned in for grading should be entirely your own. You may discuss ideas with classmates, but you may not view or copy others work, nor may you share your work with others. Any indication of copied work, either from classmates or other sources, will result in, at a minimum, a zero for the assignment and, in some cases, will be referred to the honors council.

ATTENDANCE POLICY: Attendance is taken daily. The instructor reserves the right to drop any student who misses more than 3 class lectures. The university allows for a limited number of excused absences for religious observances --- students who plan to take such an absence should notify the instructor at least two weeks in advance so that accommodations can be made (also see the missed/late work policy below). It is the student’s responsibility to obtain notes from another student if they miss class. The instructor will not give private instruction for missed lectures nor will provide lecture notes.

CLASS PREPARATION: It is the student’s responsibility to read the material in the text. The instructor will present topics during lectures, but it is not possible to cover all nuances of a particular topic. Some items are left for the student to read. A good method of preparation
would be to read the material before class to become familiar with what will be covered, attend the lecture and take notes, then review the text material and notes afterward.

FINAL EXAMINATION: A cumulative final exam is required and will be given during the time specified on the University Registrar’s Office Exam Schedule.

MISSED/LATE WORK POLICY:
- All assignments are due at the beginning of class on the scheduled due date.
- Late homework is not accepted without prior arrangement.
- Makeup tests are not given.
- Students with planned absences, whether for university events, religious observance, or other reason, are expected to make arrangements with the instructor to turn in assignments or take exams before the scheduled date of the assignment or test.
- The final exam must be taken. If the final is missed without prior arrangement, the student will be given a zero for the exam.

ACCREDITATION: As part of our accreditation, samples of student work will be archived. Names are removed before copying.

CLASS HANDOUTS: Any handouts used in class will be available through the Course Documents link on Blackboard.

ANNOUNCEMENTS: If the need should arise, any announcements to the class will be made through the Announcements page on Blackboard, so check it often.

EMERGENCY PREPAREDNESS: Closure of university facilities and classrooms in response to some emergency does not mean that this class is halted. Students should check Blackboard for announcements about how the class will proceed in the event of such an emergency.

ADA STATEMENT: UNCG seeks to comply fully with the Americans with Disabilities Act (ADA). Students requesting accommodations based on a disability must be registered with The Office of Accessibility Resources and Services (OARS) located in 215 Elliott University Center: (336) 334–5440.

COMMERCIAL NOTE-TAKING SERVICES: Selling class notes for commercial gain or purchasing such class notes in this or any other course at UNCG is a violation of the University’s Copyright Policy and of the Student Code of Conduct. Sharing notes for studying purposes, or borrowing notes to make up for absences, without commercial gain, are not violations.

LAPTOPS, CELL PHONES, AND OTHER ELECTRONIC DEVICES: Laptops can be a tremendous academic resource during class. They can also be a tremendous distraction. Laptops and tablets are permitted, but you should resist the temptation to check email, chat, or play games during class. Cell phones are not permitted. The class policy is “no non-class use.” If you are found violating the policy, your electronic device privileges may be revoked. Out of respect to your instructor and your classmates, please turn off the sound on your device during class.

DISRUPTIVE BEHAVIOR: Disruptive behavior is unacceptable in any classroom. Please do not engage in non-class-related conversation, e-mail, text messaging, telephone conversations, online shopping, social networking, music playlists, online videos or movies, video gaming, or another professor’s homework while in class. You may be asked to leave the room and considered absent; persistent behavior of this type may result in you being dropped from the course (see UNCG's
Disruptive Behavior Policy).