Fayetteville State University  
College of Arts and Sciences  
Department of Mathematics and Computer Science  
CSC 105 - 02: Introduction to Computer Science for Technical Majors  
Spring 2015

I. Locator Information:  
Instructor: Sambit Bhattacharya  
Course # and Name: CSC 105, Section 02  
Introduction to Computer Science for Technical Majors  
Semester Credit Hours: 3.00  
Office Location: Science & Technology (ST) Building, 214  
Office hours: TR: 9:45 – 11:00 am, T: 12:15 – 3:45 pm,  
R: 1:45 – 3:45 pm, Online meeting at varying times  
Day and Time Class Meets: 3:45 – 5:00 p.m.  
Class Location: ST 237  
Email address: sbhattac@uncfsu.edu  
Total Contact Hours for Class: 46

FSU Policy on Electronic Mail: Fayetteville State University provides to each student, free of charge, an electronic mail account (username@uncfsu.edu) that is easily accessible via the Internet. The university has established FSU email as the primary mode of correspondence between university officials and enrolled students. Inquiries and requests from students pertaining to academic records, grades, bills, financial aid, and other matters of a confidential nature must be submitted via FSU email. Inquiries or requests from personal email accounts are not assured a response. The university maintains open-use computer laboratories throughout the campus that can be used to access electronic mail.  
Rules and regulations governing the use of FSU email may be found at http://www.uncfsu.edu/PDFs/EmailPolicyFinal.pdf

II. Course Description: This course is an introduction to the fundamental concepts and skills needed by students who anticipate majoring in computer science or other technical majors such as mathematics or a natural science. Topics include algorithms as models of computational processes, programming fundamentals such as data models and control structures, and the computing environment and its tools, such as basic hardware, editors, compilers, and debuggers. Prerequisite: none

III. Disabled Student Services: In accordance with Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ACA) of 1990, if you have a disability or think you have a disability to please contact the Center for Personal Development in the Spaulding Building, Room 155 (1st Floor); 910-672-1203.

IV. Title IX – Sexual Misconduct  
Fayetteville State University (University) is committed to fostering a safe campus environment where sexual misconduct — including sexual harassment, domestic and dating violence, sexual assault, and stalking - is unacceptable and is not tolerated. The University encourages students who may have experienced sexual misconduct to speak with someone at the University so that the University can provide the support that is needed and respond appropriately. The Sexual Misconduct policy can be found at the following link:  http://www.uncfsu.edu/Documents/Policy/students/SexualMisconduct.pdf

Consulting with a Health Care Professional - A student who wishes to confidentially speak about an incident of sexual misconduct should contact either of the following individuals who are required to maintain confidentiality:

Ms. Pamela C. Fisher  
Licensed Professional Counselor  
Spaulding Building, Room 165  
(910) 672-387  
psmith@uncfsu.edu

Ms. Linda Melvin  
Director, Student Health Services  
Spaulding Building, Room 121  
(910) 672-1454  
lmelvi10@uncfsu.edu

Reporting an Incident of Sexual Misconduct - The University encourages students to report incidents of sexual misconduct. A student who wishes to report sexual misconduct or has questions about University policies and procedures regarding sexual misconduct should contact the following individual:

Ms. Victoria Ratliff  
Deputy Title IX Coordinator for Students  
Spaulding Building, Room 155  
(910) 672-1222  
vratliff@uncfsu.edu
Unlike the Licensed Professional Counselor or the Director of Student Health Services, the Deputy Title IX Coordinator is legally obligated to investigate reports of sexual misconduct, and therefore cannot guarantee confidentiality, but a request for confidentiality will be considered and respected to the extent possible.

Students are also encouraged to report incidents of sexual misconduct to the University’s Police and Public Safety Department at (910) 672-1911.

V. Textbook and other materials:


2. Required learning units for computational music remixing using Python: the website http://earsketch.gatech.edu has learning materials under the “Contents” area organized as learning units. These units will be used in class instruction.

3. Required online learning resources on Graphics and Geographic Information Systems (GIS). The webpage is http://calicoproject.org/ (look under links to the left of webpage for the link titled “The Calico Project” under “ipre resources”; under this locate the “Table of Contents” and follow the links to “Calico Graphics” and “Calico Python GIS” under item # 3 of 3. Modules under 4. Documentation).

4. Required textbook (free): *Learning Computing With Robots using Calico Python* edited by Deepak Kumar. This is a free book that emphasizes learning how to program using robotics and it is available online as PDF file from http://calicoproject.org/ (look under links to the left of webpage for “Computing with Robots textbook” under “ipre resources”). We will use the most recent version.

5. Required software for program development: the Calico integrated development environment (IDE) freely available from http://calicoproject.org/ (look under links to the left of webpage for the link titled “Calico installation” under “ipre resources”; under this locate the “Download and Install” sub-section which provides instructions for different operating systems). This software will be used for all types of Python program development Students must have this software on their personally owned computers for working on class projects outside of university labs. Note that the version installed in university labs may be older than the most current version. The choice of version to install on personally owned computers is up to the students.

6. Required web-hosted environment for computational music remixing using Python: the website http://earsketch.gatech.edu has link within the sentence “Access the latest version of EarSketch here.” Follow the link (by clicking on the word “here”) to open the web-hosted environment which has three important parts – the Digital Audio Workstation (DAW), the Code Editor and the Sound File Browser.

7. Optional materials: IPRE Robot Kit and at least 6 AA rechargeable batteries and a charger. If used for class projects these will be handed out in class during lab sessions and have to be returned after that lab session is over. Optionally students can purchase the kit from http://betterbots.com/.

VI. Student Learning Outcomes – Upon completion of this course, students will be able to:

1. describe the components of a computer
2. use different data types, variables, constants, assignments statements, increment, decrement, arithmetic operations and mathematical functions in programs
3. use control structures including sequence, selection, repetition, and functions
4. create algorithms in pseudocode or flowchart form
5. create simple programs
6. use an IDE to develop and execute programs

VII. Course Requirements and Evaluation Criteria -

<table>
<thead>
<tr>
<th>Grade</th>
<th>Total point range</th>
<th>Credit Hours</th>
<th>Quality Points</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90% – 100%</td>
<td>Hours attempted and earned</td>
<td>4 per credit hour;</td>
<td>Exceptionally high</td>
</tr>
<tr>
<td>B</td>
<td>80% – 89.99%</td>
<td>Hours attempted and earned</td>
<td>3 per credit hour</td>
<td>Good</td>
</tr>
<tr>
<td>C</td>
<td>65% – 79.99%</td>
<td>Hours attempted and earned</td>
<td>2 per credit hour</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>D</td>
<td>55% – 64.99%</td>
<td>Hours attempted and earned</td>
<td>1 per credit hour</td>
<td>Marginally passing</td>
</tr>
<tr>
<td>F</td>
<td>below 55%</td>
<td>Hours attempted – Not earned</td>
<td>0 per credit hour</td>
<td>Failing</td>
</tr>
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</table>
b. Attendance Requirements – Students are expected to attend all class meetings, laboratories, and other instructional sessions for this course. Students are also expected to arrive to class on time and remain in class for the entire scheduled period. When students must miss class(es) for unavoidable reasons, i.e., illness, family emergencies, or participation in official university sponsored activities – they are responsible for informing faculty of the reasons for the absences, in advance if possible. Missed assignments, labs, quizzes and exams can only be made up for by explicit permission from the instructor. In order to receive this permission the student has to provide convincing evidence (e.g. doctor’s note) that the absence was due to an unavoidable reason. During the first half of the semester/term, faculty will assign an interim grade of “EA,” Excessive Absences, for students whose class absences exceed 10% of the total contact hours for the class. Students who receive EA interim grades must either withdraw from the class or resume attendance. Students who resume attendance must consult with the instructor about completion of missed assignments. The EA is not a final grade, so students who are assigned an interim grade of EA, but do not withdraw from the class, will receive a final grade based on the evaluation criteria for the class. Note: in case FSU must close for an emergency during the semester, instruction will continue using Blackboard.

c. Graded Assignments and Value of Each Assignment -
   i. Two tests worth 10% each for a total of 20%
   ii. Final test worth 30%
   iii. 4-6 programming projects worth a total of 40%. Some assignments may be substituted with in-class quizzes.
   iv. Class participation as measured by attendance, instructor observation and completion of surveys, worth 10%.

d. Policy on Missed or Late Assignments - tests and quizzes missed due to an unavoidable reason can be made up only with the instructor’s permission. In order to receive this permission the student has to provide convincing evidence (e.g. doctor’s note) that the absence was due to an unavoidable reason. There is a penalty of 5% for each day a project is overdue. Project submissions that are more than a week overdue will not be accepted for grading.

e. Dishonesty in academic affairs – Acts of dishonesty in any work constitute academic misconduct. Such acts include cheating, plagiarism, misrepresentation, fabrication of information, and abetting any of the above. Plagiarism in particular presents pitfalls to be avoided: failure to document any words, ideas, or other contributions that do not originate with the author constitutes plagiarism. Widespread use of the World Wide Web (Internet) requires particular attention to proper documentation practices. Individual course syllabi offer additional clarification about requirements for proper documentation. Actions outlined in the Fayetteville State University Student Handbook under Disciplinary System and Procedures will be followed for incidents of academic misconduct. The handbook may be obtained from the Office of Student Affairs located in the Collins Administration Building. Non-disclosure or misrepresentation on applications and other university records will make students liable for disciplinary action, including possible expulsion from the university.
Please note: If these evaluation criteria must be revised because of extraordinary circumstances, the instructor will distribute a written amendment to the syllabus.

**FSU Policy on Disruptive Behavior in the Classroom**

The *Code of the University of North Carolina* (of which FSU is a constituent institution) and the *FSU Code of Student Conduct* affirm that all students have the right to receive instruction without interference from other students who disrupt classes.

FSU Core Curriculum Learning Outcome under Ethics and Civic Engagement (6.03): All students will “prepare themselves for responsible citizenship by fulfilling roles and responsibilities associated with membership in various organizations.” Each classroom is a mini-community. Students learn and demonstrate responsible citizenship by abiding by the rules of classroom behavior and respecting the rights all members of the class.

The FSU Policy on Disruptive Behavior (see FSU website for complete policy) identifies the following behaviors as disruptive:

1. Failure to respect the rights of other students to express their viewpoints by behaviors such as repeatedly interrupting others while they speak, using profanity and/or disrespectful names or labels for others, ridiculing others for their viewpoints, and other similar behaviors;
2. Excessive talking to other students while the faculty member or other students are presenting information or expressing their viewpoints.
3. Use of cell phones and other electronic devices
4. Overt inattentiveness (sleeping, reading newspapers)
5. Eating in class (except as permitted by the faculty member)
6. Threats or statements that jeopardize the safety of the student and others
7. Failure to follow reasonable requests of faculty members
8. Entering class late or leaving class early on regular basis
9. Others as specified by the instructor.

The instructor may take the following actions in response to disruptive behavior. Students should recognize that refusing to comply with reasonable requests from the faculty member is another incidence of disruptive behavior.

1. Direct student to cease disruptive behavior.
2. Direct student to change seating locations.
3. Require student to have individual conference with faculty member. At his meeting the faculty member will explain the consequences of continued disruptive behavior.
4. Dismiss class for the remainder of the period. (Must be reported to department chair.)
5. Lower the student’s final exam by a maximum of one-letter grade.
6. File a complaint with the Dean of Students for more severe disciplinary action.

Students who believe the faculty member has unfairly applied the policy to them may make an appeal with the faculty member’s department chair.

**VIII. Academic Support Resources** – This course uses FSU Blackboard for online dissemination. Students will find most materials online within the Blackboard module for this course. Project submissions and most tests will be implemented through Blackboard so students are required to check the Blackboard course website and their email at least once a day.
# IX. Course Outline and Assignment Schedule

<table>
<thead>
<tr>
<th>WEEK</th>
<th>LECTURE TOPICS &amp; ACTIVITIES</th>
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<tbody>
<tr>
<td>FIRST</td>
<td>INTRODUCTIONS AND COURSE OVERVIEW. WRITING SCRIPTS WITH BUILT-IN FUNCTIONS FOR APPLICATIONS – INPUT/OUTPUT, ROBOTICS, MUSIC REMIXING, GRAPHICS, PART I</td>
</tr>
<tr>
<td>SECOND</td>
<td>WRITING SCRIPTS WITH BUILT-IN FUNCTIONS FOR APPLICATIONS – INPUT/OUTPUT, ROBOTICS, MUSIC REMIXING, GRAPHICS, PART II</td>
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<tr>
<td>THIRD</td>
<td>CHAPTER 2. PYTHON DATA TYPES</td>
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<tr>
<td>FOURTH</td>
<td>CHAPTER 3. IMPERATIVE PROGRAMMING APPLICATION AREAS: ROBOTICS, MUSIC REMIXING</td>
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<tr>
<td>FIFTH</td>
<td>CHAPTER 3. IMPERATIVE PROGRAMMING APPLICATION AREAS: ROBOTICS, MUSIC REMIXING</td>
</tr>
<tr>
<td>SIXTH</td>
<td>CHAPTER 4. TEXT DATA, FILES, AND EXCEPTIONS</td>
</tr>
<tr>
<td>SEVENTH</td>
<td>CHAPTER 4. TEXT DATA, FILES, AND EXCEPTIONS APPLICATION AREAS: MUSIC REMIXING, GRAPHICS, GEOGRAPHIC INFORMATION SYSTEMS (GIS)</td>
</tr>
<tr>
<td>EIGHTH</td>
<td>TEST 1</td>
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<tr>
<td>NINTH</td>
<td>BREAK</td>
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<tr>
<td>TENTH</td>
<td>CHAPTER 5. EXECUTION CONTROL STRUCTURES</td>
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<tr>
<td>ELEVENTH</td>
<td>CHAPTER 5. EXECUTION CONTROL STRUCTURES APPLICATION AREAS: ALL</td>
</tr>
<tr>
<td>TWELFTH</td>
<td>CHAPTER 5. EXECUTION CONTROL STRUCTURES APPLICATION AREAS: MUSIC REMIXING</td>
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<tr>
<td>THIRTEENTH</td>
<td>CHAPTER 6. CONTAINERS AND RANDOMNESS</td>
</tr>
<tr>
<td>FOURTEENTH</td>
<td>TEST 2</td>
</tr>
<tr>
<td>FIFTEENTH</td>
<td>CHAPTER 6. CONTAINERS AND RANDOMNESS APPLICATION AREAS: MUSIC REMIXING</td>
</tr>
<tr>
<td>SIXTEENTH</td>
<td>REVIEW</td>
</tr>
</tbody>
</table>

**FINAL EXAMS FOR GRADUATING SENIORS:** 04/27 – 05/02  
**FINAL EXAMS FOR STUDENTS NOT GRADUATING:** 05/02 – 05/08
X. Teaching Strategies – This course has both lecture and lab sessions that will be held in the same classroom. Lab sessions are mostly discussion-oriented, interactive problem-solving sessions. Lecture, while also discussion-oriented, will provide theoretical knowledge that supports the lab sessions and project work. This course is about programming with application areas like music remixing, robotics, etc., so timely and successful completion of programming projects is of the highest importance.

XI. Bibliography -

17. “A Byte of Python” Swaroop C H. This book can be read online or downloaded from http://www.byteofpython.info/