

Fayetteville State University
College of Arts and Sciences
Department of Mathematics and Computer Science
CSC 390 - D1: Topics in Computer Science
Fall 2011

I. Locator Information:

Instructor: Sambit Bhattacharya

Course # and Name: CSC 390, Section D1

Topics in Computer Science

Semester Credit Hours: 3.00

Day and Time Class Meets: Online

Class Location: Online, Blackboard course website

Total Contact Hours for Class: 46

Office Location: SBE 310

Office hours: MF:- 11:00 am-1:00 pm,

MW:- 2:00 pm -4:00 pm

Office Phone: 910 672 1156

Email address: sbhattac@uncfsu.edu

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 designed to cover contemporary topics of current interest and demands in computer and information science at the junior and senior levels. It may be repeated for credit with approval of department.

Prerequisites: CSC 201 and CSC 207 and CSC 220.

Topic: Mobile Application Development (Part 1)

Topic Description: This course will introduce students to mobile application development. For this course the choice of mobile platform is the BlackBerry handheld device and the language is Java which is supported by the device. The course will first cover the main features of the Java programming language, i.e. objects & classes, methods, inheritance and polymorphism, variables & parameters, types, selection and iteration, graphics and event based programming in a general manner without reference to any specific devices and their programming environments. This initial but rapid coverage is to bring students up to speed with Java and will be done assuming that the student is well versed in one or more programming languages, but not necessarily Java. The next part of the course will cover application development in Java for the class of mobile handheld devices with specific focus on the Blackberry Bold 9000 model. The course will cover fundamental BlackBerry concepts such as development tools, architecture, UI components, multimedia, event handling, networking, and managing data. The student will be able to create applications like mobile games for the device with the knowledge gained from the course.

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. Textbook and other materials:

1. This course will study materials developed by Research In Motion (RIM) for the BlackBerry Academic Program. The webpage for this is <http://us.blackberry.com/atagance/academic/content.jsp>. Students will be informed of the specific selection of documents which will be used in this course.
2. In addition to above documents and example programs prepared by the instructor.
3. **Required software:** BlackBerry® Java® Development Environment (JDE). Since this is an online class students are required to download and install this free software on their personal computers. For download go to webpage given above, choose the **Developer Tools** tab, from there choose **BlackBerry® Java® Development Environment**, and then download and install **BlackBerry JDE v4.6.0**. Note: choose this version i.e. 4.6.0, not the other available versions to ensure compatibility with the actual hardware device (described below). The JDE

comes with a BlackBerry simulator. Students will test Java programs on the simulator until they are given the hardware device.

4. **Required Hardware:** students do not need to buy this. The **BlackBerry Bold 9000** device will be given to students a few weeks after start of the semester for testing programs on real hardware. The device will be given only if students sign a contract promising to return the device after the semester ends.

V. Student Learning Outcomes –

Upon completion of this course, students will be able to:

1. explain the concepts of object oriented programming.
2. explain the concepts of event based programming.
3. explain the use of object oriented and event based programming in creating applications for mobile devices.
4. use development tools for the BlackBerry mobile device.
5. write programs that use UI components for the BlackBerry mobile device.
6. write multimedia programs for the BlackBerry mobile device.
7. write event handling programs for the BlackBerry mobile device.
8. write networking programs for the BlackBerry mobile device.
9. write data management programs for the BlackBerry mobile device.

VI. Course Requirements and Evaluation Criteria -

- a. Grading Scale -

Grade	Total point range	Credit Hours	Quality Points	Meaning
A	90% – 100%	Hours attempted and earned	4 per credit hour;	Exceptionally high
B	80% – 89.99%	Hours attempted and earned	3 per credit hour	Good
C	65% – 79.99%	Hours attempted and earned	2 per credit hour	Satisfactory
D	55% – 64.99%	Hours attempted and earned	1 per credit hour	Marginally passing
F	below 55%	Hours attempted – Not earned	0 per credit hour	Failing
FN		Hours attempted – Not earned	0 per credit hour	Failing due to non-attendance. (Student registered, but <u>never</u> attended.)
W		Hours attempted – Not earned	No impact on GPA	Class withdrawal prior to deadline (see Academic Calendar)
P		Hours attempted and earned	No impact on GPA	Satisfactory - Assigned only in classes specified as Pass/Fail
WU		Hours attempted – Not earned	No impact on GPA	Withdrawal from all classes for semester or term
AU		Hours attempted – Not earned	No impact on GPA	Auditing

- b. Attendance Requirements – **Note: the following requirements are for regular face to face classes and while they do not apply directly to an online course such as this one, students are required to follow them in spirit; lack of participation in discussion boards, late submission of projects etc. will be equivalent to classroom absence in our online course.** 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 20%
 - iii. Programming projects and discussion board participation (total of 60%):

Discussion Board Grading Policy:

The Discussion Board will allow each student the opportunity to interact with other students in the course and offer their insights on a variety of topics that relate to the lecture material. Each student can receive a maximum of 16 points for participation in the discussion board. Transcripts of the discussion board will be reviewed by the professor to assess the level of participation by each student. Failure to participate during Discussion Board in the designated time will result in a grade of zero (0) for the week. Refer to Grading Rubric for Discussion Postings below to determine the point breakdown and student expectations regarding the Discussion Board. Discussion Board topics will be announced and their discussion boards will be added by the instructor as the semester progresses.

VII. Grading Rubric for Discussion Postings

	4 (Excellent)	3 (Good)	2 (Fair)	1 (Poor)
Contribution to the Classroom	Posting is insightful, thorough, and interesting.	Posting is thorough and interesting.	Posting is interesting but lacks insight and depth.	Posting is uninteresting and/or too brief for the assignment.
Inspires Reply Postings from Other Students	A serious effort is made to frame the discussion posting in such a way as to encourage others to reply. Posting generates questions and opens up new avenues for discussion.	A serious effort is made to frame the discussion posting in such a way as to encourage others to reply.	Some effort is made to frame the discussion posting in such a way as to encourage others to reply.	No effort is made to frame the discussion posting in such a way as to encourage others to reply.
Demonstrated Understanding of the Reading Assignment	Posting demonstrates a thorough understanding of the reading assignment and is substantiated by several examples from the textbook and/or companion website.	Posting demonstrates an understanding of the reading assignment and is substantiated by at least one example from the textbook and/or companion website.	Posting demonstrates an understanding of the reading assignment but is not substantiated by examples from the textbook and/or companion website.	Posting demonstrates very little understanding of the reading assignment.
Grammar, Mechanics, Spelling, and Sentence Structure	Posting is highly polished; no grammar or spelling errors.	Posting is polished; maximum of one grammar or spelling error.	Posting is adequate; maximum of two grammar or spelling errors.	Inadequate posting; more than two spelling or grammar errors.

- a. 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.
- b. Policy on email format –
 - i. Course name CSC390 must be written in the subject box:
 - ii. Include your first and last names after your email message
 - iii. Email that does not follow the communication policy and procedure will not receive a response.
 - iv. Email without the course name CSC390 in the subject box will not be opened.
 - v. Email without a first and last name will not receive a response.
- c. Communication policy –
 - i. Post your question to the Frequently Asked Questions (FAQ) forum in the Discussion Board in Blackboard
 - ii. Each student is expected to check and respond to the FAQ's in between class sessions. If you have not received an answer at this point, email your instructor (be sure to follow the email policy below)
 - iii. Discussion boards pertaining to particular topics will be added by the instructor as the semester progresses. The instructor will notify students of such additions and student participation is also required in those additional discussion boards.
 - iv. The purpose of this procedure is to work and learn together.
 - v. Discussion boards will be used as communication vehicles as well as course requirements. The purposes of the discussion boards are: to ask and answer each other's questions about course information, technical issues and course material such as lecture and textbook contents.
 - vi. Participation in discussion boards counts towards a significant part of your grade. Refer to "Method of Evaluation" below for more details.
- d. Assignment policy –
 - i. Assignments are posted in Blackboard under "Assignments" and must be submitted on or before the due date. On-line assignments for each week must be submitted by Sunday at 5:00 p.m. EST unless otherwise stated. There are no exceptions for this deadline.
 - ii. All assignments must be submitted online via the View/Complete link found in each assignment.
 - iii. Assignments submitted online via the View/Complete link must be turned in as a file attachment.
 - iv. Do not email assignments to your instructor.
 - v. Do not submit assignments to the Digital Drop Box.
 - vi. Assignments submitted via email to the instructor or the digital drop box will not be accepted.

Five percent (5%) of the total points will be deducted from each school day a programming assignment is overdue.
- 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.

- VII. 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.

VIII. Course Outline and Assignment Schedule -

WEEK	LECTURE TOPICS & ACTIVITIES
FIRST DATES: 08/18 – 08/19	Course orientation
SECOND DATES: 08/22 – 08/26	Object Oriented Programming (OOP) with Java - I
THIRD DATES: 08/29 - 09/02	Object Oriented Programming (OOP) with Java - II
FOURTH DATES: 09/05 - 09/09	Event Based Programming with Java Labor day, 09/05
FIFTH DATES: 09/12 - 09/16	Use of OOP and Event Based programming in creating applications for mobile devices
SIXTH DATES: 09/19 - 09/23	UI components for the BlackBerry mobile device - I
SEVENTH DATES: 09/26 - 09/30	UI components for the BlackBerry mobile device - II
EIGHTTH DATES: 10/03 - 10/07	UI components for the BlackBerry mobile device - III Midterm tests 10/06 – 10/12
NINTH DATES: 10/10 - 10/14	Multimedia programming for the BlackBerry mobile device - I Midterm tests 10/06 – 10/12
TENTH DATES: 10/17 - 10/21	Multimedia programming for the BlackBerry mobile device - II Midterm break, 10/17 & 10/18
ELEVENTH DATES: 10/24 - 10/28	Event handling programs for the BlackBerry mobile device - I
TWELFTH DATES: 10/31 - 11/04	Event handling programs for the BlackBerry mobile device - II
THIRTEENTH DATES: 11/07 – 11/11	Event handling programs for the BlackBerry mobile device – III Veteran’s day, 11/11
FOURTEENTH DATES: 11/14 – 11/18	Networking and date management programs for the BlackBerry mobile device
FIFTEENTH DATES: 11/21 – 11/25	EXTRA TOPICS Thanksgiving break, 11/24 & 11/25
SIXTEENTH DATES: 11/28 – 12/02	REVIEW
Final exam for graduating seniors 11/28 – 12/03 Last day of classes is 12/02 Final exam for seniors (not graduating) 12/03 – 12/09	

IX. Teaching Strategies – The primary teaching strategies for this course will be lectures and discussion. You are strongly encouraged to participate in any discussion. Programs in Java will be used to demonstrate how mobile applications are built. In addition to solving tests and homework problems students will complete programming projects in this course.

X. Bibliography -

1. Beginning BlackBerry Development (Books for Professionals by Professionals) by Anthony Rizk, Apress, 1st edition, 2009, ISBN-10: 1430272252, ISBN-13: 978-1430272250.
2. Advanced BlackBerry Development by Chris King, Apress, 1st edition, 2009, ISBN-10: 1430226560, ISBN-13: 978-1430226567.
3. Advanced BlackBerry 6 Development by Chris King, Apress, 2nd edition, 2011, ISBN-10: 1430232102, ISBN-13: 978-1430232100.
4. BlackBerry Development Fundamentals by John M. Wargo, Addison-Wesley Professional, 1st edition, 2009, ISBN-10: 0321647424, ISBN-13: 978-0321647429.
5. Beginning Smartphone Web Development by Gail Frederick, Apress, 1st edition, 2010, ISBN-10: 143022620X, ISBN-13: 978-1430226208.
6. Mobile Design and Development: Practical Concepts and Techniques for Creating Mobile Sites and Web Apps by Brian Fling, O'Reilly Media, 1st edition, 2009, ISBN-10: 0596155441, ISBN-13: 978-0596155445.
7. Mobile Applications: Architecture, Design, and Development by Valentino Lee, Heather Schneider and Robbie Schell, Prentice Hall, 1st edition, 2004, ISBN-10: 0131172638, ISBN-13: 978-0131172630.
8. Mobile Application Development with SMS and the SIM Toolkit by Scott Guthery and Mary Cronin, McGraw-Hill Professional, 1st edition, 2001, ISBN-10: 0071375406, ISBN-13: 978-0071375405.
9. Programming the Mobile Web by Maximiliano Firtman, O'Reilly Media, 1st edition, 2010, ISBN-10: 059680778, ISBN-13: 978-0596807788.
10. Building iPhone Apps with HTML, CSS, and JavaScript: Making App Store Apps Without Objective-C or Cocoa by Jonathan Stark, O'Reilly Media, 1st edition, 2010, ISBN-10: 0596805780, ISBN-13: 978-0596805784.
11. Microsoft® Mobile Development Handbook by Andy Wigley, Daniel Moth and Peter Foot, Microsoft Press, 1st edition, 2007, ISBN-10: 0735623589, ISBN-13: 978-0735623583.
12. Beginning Web Development for Smartphones: Developing Web Applications with PHP, MySQL, and jQuery by B.M. Harwani, CreateSpace, 2010, ISBN-10: 1453831053, ISBN-13: 978-1453831052.
13. Hello, Android: Introducing Google's Mobile Development Platform (Pragmatic Programmers) by Ed Burnette, Pragmatic Bookshelf, 3rd edition, 2010, ISBN-10: 1934356565, ISBN-13: 978-1934356562.
14. Android Wireless Application Development (Developer's Library) by Shane Conder and Lauren Darcey, Addison-Wesley Professional, 2nd edition, 2010, ISBN-10: 0321743016, ISBN-13: 978-0321743015.
15. App Savvy: Turning Ideas into iPad and iPhone Apps Customers Really Want by Ken Yarmosh and John Jantsch, O'Reilly Media, 1st edition, 2010, ISBN-10: 1449389767, ISBN-13: 978-1449389765.
16. Beginning Android Application Development (Wrox Programmer to Programmer) by Wei Meng Lee, Wrox, 1st edition, 2011, ISBN-10: 1118017110, ISBN-13: 978-1118017111.
17. Writing Mobile Code: Essential Software Engineering for Building Mobile Applications by Ivo Salmre, Addison-Wesley Professional, 2005, ISBN-10: 0321269314, ISBN-13: 978-0321269317.
18. Professional Android 2 Application Development (Wrox Programmer to Programmer) by Reto Meier, Wrox, 2nd edition, 2010, ISBN-10: 0470565527, ISBN-13: 978-0470565520.
19. Mobile Application Development: High-impact Strategies - What You Need to Know: Definitions, Adoptions, Impact, Benefits, Maturity, Vendors by Kevin Roebuck, Emereo Pty Ltd, 2011, ISBN-10: 1743044879, ISBN-13: 978-1743044872.
20. The App and Mobile Case Study Book by Rob Ford and Julius Wiedermann, Taschen, 2011, ISBN-10: 3836528800, ISBN-13: 978-3836528801.
21. iPhone Open Application Development: Write Native Applications Using the Open Source Tool Chain by Jonathan A. Zdziarski, O'Reilly Media, 2nd edition, 2008, ISBN-10: 0596155190, ISBN-13: 978-0596155193.