New York City College of Technology
City University of New York
CST 2301
4 hours – 3 credits
Spring 2013

Section M/W 2-3:40pm

Instructor**:** __Prof Moody

Instructor's Office Location _*1027*_

Office Hours:_M ,W 1:00-2:00pm

Instructor's Email DMoody@citytech.cuny.edu ____Office _*Room 1027 718-260-5167*_

Course Description:

This course will cover how the Java language can support applications on mobile devies as cell phones, PDAs and other small computational devices. Students will learn the strengths and limitations of using the Java JVM on small devices. Specific topics will include configurations and profiles; overview of programming mobile devices; standard and custom user interface elements and events; record stores and persistence; drawing and animation using game APIs and 3D APIs; audio and video APIs; comparison of current technologies.

At the conclusion of the course, the student will be familiar with a special set of JAVA classes designed to work on mobile devices and interact with multimedia files.

Course Objectives:
Upon successful completion of the course, the student should be able to:

1. Understand the Java environment on small remote devices.
2. Be familiar and experienced with J2ME MIDLets, the building block of Java for cell phone and multi-media applications
3. Create simple applications to illustrate the concepts of abstract and discovered components in graphical user interfaces, commands, and event handling.
4. Appreciate the complexities and challenges in moving large multimedia files to and from databases.
5. Develop software that can access databases and move large multimedia files to remote platforms
6. Describe the strengths and weaknesses of applications deployed on remote devices

General Education Outcomes:

- **SKILLS/Inquiry/Analysis:** Students will employ scientific reasoning and logical thinking.

- **SKILLS/Communication:** Students will communicate in diverse settings and groups, using written (both reading and writing), oral (both speaking and listening), and visual means

- **VALUES, ETHICS, RELATIONSHIPS / Professional/Personal Development:** Students will work with teams, including those of diverse composition. Build consensus. Respect and use creativity.

Prerequisite – Java programming – CST1201

Required Texts –

- **Beginning J2ME: From Novice to Professional, Third Edition (Novice to Professional)** by Jonathan Knudsen, Sing Li

Attendance – Attendance is expected at every class meeting. College policy sets the maximum number of permissible absences at 10% of the number of class meetings scheduled for the semester. You are permitted to be absent a total of three class sessions.

Evaluation and Grading –

	Value
Final	30%
Three Tests	40% (Top two scores averages)
Assignments	30%
	=====
Total	100%

Programming Assignments - All students must complete all programming assignments.

Grade System: Numerical Grade Ranges	**Letter Grade**
93-100	A
90-92.9	A-
87-89.9	B+
83-86.9	B
80-82.9	B-
77-79.9	C+
70-76.9	C
60-69.9	D
59.9 and below	F

Academic Violation – The instructor of the course has the authority to give a grade of **F** if the student submits the work of another person in a manner that represents his/her work, or knowingly permits one's work to be submitted by another person without the instructor's permission. All class projects must be on your own floppy disk.

Grade Requirement – All majors in CIS, MS, and CIB must attain a grade of C or better in all MS and CS courses

Course Syllabus
Assignments will be posted on Blackboard

Meeting	Date	Topic to be Covered	Assignment
1	1/28	Introduction to mobile information devices using Java	
2	1/30	Review of NetBeans environment, object oriented class construction, working with GUI	Assignment 1
3	2/4	Event handling, properties, methods, Simple Game Program	Assignment 2
4	2/6	Objects and Classes, Sample Usage	Assignment 3
5	2/11	Coding Custom Classes, general methods	
6	2/13	Constructor, GET , SET methods	Assignment 4
7	2/20	Integrating user interface and custom classes	
8	2/25	**TEST 1**	
9	2/27	Midlet Lifecycle and ALERT Forms	Assignment 5
10	3/4	Alert Forms Continued	
11	3/6	Textboxes and Forms	Assignment 6
12	3/11	Forms and Items – TextField,	
13	3/13	Item commands; Item state changes; the Pizza Order application.	Assignment 7
14	3/18	Choice Groups	
15	3/20	Custom Items and Graphic Object	
16	4/3	Graphics Object Continued	
17	4/8	**TEST 2**	
18	4/10	Game Playing Application Structure	Assignment 8
19	4/15	Game Playing Application Structure (cont)	
20	4/17	Modifying game application	
21	4/22	Modifying game application (cont.)	Assignment 9
22	4/24	Advanced Graphics Objects	
23	4/29	Classwork on Game Changes, Test Review	
24	5/1	**TEST 3**	
25	5/6	Sequential I/O with Midlets	
26	5/8	Sequential I/O with Midlets (cont.)	Assignment 10
27	5/13	Current Platform comparisons (Android, Apple)	
28	5/15	Current Platform comparisons	
29	5/20	Final Review	
30	5/22	**Final**	

Course Assessment:

For the successful completion of this course a student should be able to:	Evaluation methods and criteria
1. Describe the challenges, opportunities and constraints working with MIDlets on mobile devices	1. Students will have modified programs that illustrate principles of mobile device programming
2. Design a user interface on a mobile device to capture user input and take business action	2. Students' ability to create user interfaces using forms and canvas techniques
3. Understand the role of threads on the local device	3. Students will use threading classes within homework assignments
4. Appreciate the challenges of handling game playing applications	4. Students will document and answer questions on issues of animation within game playing

General Education Outcomes and Assessment:

Learning Outcomes	Assessment Method
SKILLS/Inquiry/Analysis Students will employ scientific reasoning and logical thinking.	Students will describe problem, identify inputs, processes and desired outcomes in laboratory assignments, class work and tests. Students will solve problems with the NetBeans software development tool in laboratory assignments, class work and tests. Students will identify coding paradigms in Laboratory Assignments, Class work and tests
SKILLS/Communication Students will communicate in diverse settings and groups, using written (both reading and writing), oral (both speaking and listening), and visual means	Students will present their analysis of Mobile device applications in written and oral form. Students will display the Catalog project to the class detailing key technical objectives met.
VALUES, ETHICS, RELATIONSHIPS / Professional/Personal Development Students will work with teams, including those of diverse composition. Build consensus. Respect and use creativity.	Students will demonstrate creativity in modifying mobile apps to meet the user needs.