CPSC 241: Mobile Apps

Adewale Sekoni

Spring, 2020

E-mail: sekoni@roanoke.edu
Office Hours: MWF 12:00 1:30, or appointment
Office: Trexler 365B

Class Hours: TTh Group A/B, 1:10-1:50/2:00-2:40
Class Room: Trexler 363

Course Objectives

At the core of every smart phone is a computer that functions by manipulating bits. So, how can these simple computers allow users to play music, display photos, and play games by manipulating bits? In this course students will learn from a high-level how to create apps for smart phones/browsers with a visual programming language. Students will also learn how math and logic is at the core of computation. The course is designed to . . .

1. increase the student's understanding of how computers process information,
2. increase the student's quantitative and computational reasoning skills,
3. increase the student's understanding of how to encode data using bits,
4. increase the student's understanding of how statements are proved,
5. increase the student's ability to communicate, in written form, both technical information and well-reasoned arguments.

Intended Learning Outcomes

At the end of the course the successful student will be able to:

1. describe and apply methodologies of computer science,
2. represent (encode) various data types (numbers, text, pictures) in binary, octal, and hexadecimal,
3. develop computer programs, that will demonstrate an understanding of fundamental programming concepts (variables, conditionals, loops, functions),

4. write about course topics clearly and effectively,
5. communicate effectively about the course topic in an oral format.

Course Content

Text: A Writer's Reference (7th Edition) with Writing in the Disciplines (Roanoke College Edition), by Diana Hacker, Bedford/St. Martin's, 2010.

Homework: On all assignments, your name must be written clearly as it appears on Inquire. Your homework must be neat and legible, you will lose points for submitting rough work.

Activities: App development activities are designed to give the student a structured experience in app development.

Tests and Exam: There will be a midterm and a final exam.

Co-curricular Requirement: The Mathematics, Computer Science and Physics department offers a series of discussions that appeal to a broad range of interests related to these fields of study. These co-curricular sessions will engage the community to think about ongoing research, novel applications and other issues that face these disciplines. Each student is required to attend at least Three of these sessions, and turn in a short paper describing the contents of the session, and his/her critical reflections about the topic and content. These papers are due in class within a week of the session. A paper submitted beyond a week from the event being discussed in the paper will not be accepted. The MCSP Conversation Series website has the schedule of talks in the series.

Course Policies

Grading Policy

The final grade will be computed based on the grades in the quizzes, tests, the final exam, home works and programming projects according to the following weights:

- **4%**: Co-curricular **36%**: Homework **30%**: Midterm **30%**: Final exam

The final course grade will be calculated as follows:

- **> 92%**: A **90-92%**: A- **86-89%**: B+ **83-85%**: B **80-82%**: B- **76-79%**: C+
- **73-75%**: C **70-72%**: C- **66-69%**: D+ **63-65%**: D **60-62%**: D- **< 60%**: F

All grades will be posted on Inquire. These grades are not weighted, pay no attention to the total graded on Inquire. The grades on Inquire are for record purposes only.

During Class

If you use an electronic device such as a tablet or a laptop for note-taking or to read the textbook, the content that is open on the screen should be strictly restricted to documents and pages of relevance to the class. For example, you should not have any social media websites open in your browser window, even if it is in a tab that is not currently in focus.

I encourage you to take hand written notes as you may be allowed to use them during pop quizzes.

Phones are prohibited as they are rarely useful for anything in the course. Eating and drinking are allowed in class but please refrain from it affecting the course. Try not to eat your lunch in class as the classes are typically active.

Attendance Policy

Regular attendance in class is highly recommended. Regardless of attendance, students are responsible for all material covered or assigned in class.

Policies on Incomplete Grades and Late Assignments

Late assignments will be accepted for no penalty if a valid excuse is communicated to the instructor before the deadline. Otherwise, you will receive no credit.

Academic Integrity and Honesty

Students are expected to adhere to the Academic Integrity policies of Roanoke College. All work submitted for a grade is to be strictly the work of the student unless otherwise specified by the instructor. The policies as outlined in the Academic Integrity handbook will be enforced in the course.

Graded programs are subject to the Roanoke College Academic Integrity policies. Copying a program or a portion of a program (even a single line) or reading another person's program to obtain ideas for solving a problem is plagiarism. Other examples of integrity violation include writing code for someone else, using code written by someone else, telling someone else how to solve a problem or having someone tell you how to solve a problem (and using his/her method). These cases apply to any work that is handed in for a grade under the instructor's assumption that the work is your own. Unless specified otherwise by the instructor, discussion among students should be limited to general discussion of concepts and language details, not specific aspects of a solution to the assigned problem.

You will receive no points for turning in work that you can't competently defend.

Face Covering

Face coverings/masks must be worn over the mouth and nose by all students and instructors in classrooms and hallways of academic buildings. By wearing face coverings, we protect our college community and its most vulnerable members. Students who come to class without a face mask that is being worn properly will be asked to leave and will be readmitted only after they are wearing one.

Absence for Health Reasons

If you have a temperature of 100.4 or higher or other coronavirus symptoms, don't come to class. Call Health Services IMMEDIATELY. Do not come to class or go to any public area on campus. Do keep up with all readings, assignments, and deadlines. In order for your absence to be excused, you must give Health Services permission to notify me that you have consulted them about coronavirus symptoms. If Health Services informs you that you should isolate and not attend class for multiple days or weeks, inform me so that we can make a plan to keep you current in the course. All absences caused by consultation with Health Services about coronavirus symptoms or isolation ordered by Health Services will be excused.

Going Fully Online

If the college is forced to suspend in-person attendance as was done during Spring Semester 2020, this class will continue to meet via Zoom at our regular time. I will distribute an amended syllabus. I will email the class that plan. You will need internet connectivity. If you have technology challenges, I need you to email me as soon as the decision is made to go remote so that we can discuss how you can keep up. I will continue to have office hours at my regular times via Zoom.

Subject Tutoring

Subject Tutoring, located on the lower level of Fintel Library (Room 5), is open 4 pm – 9 pm, Sunday – Thursday. We are a Level II Internationally Certified Training Center through the College Reading and Learning Association (CRLA). Subject Tutors are friendly, highly-trained Roanoke College students who offer free, one-on-one tutorials in a variety of general education and major courses such as: Business, Economics, Mathematics, INQ 240, Modern Languages, Lab Sciences, INQ 250, and Social Sciences (see all available subjects at www.roanoke.edu/tutoring). Tutoring sessions are available in-person or online in 30 or 60-minute appointments (please specify if you prefer to meet with a tutor online or in-person when you make your appointment). All in-person appointments will maintain at least 6 feet of physical distance, desks will be cleaned between appointments, and masks must be worn in all indoor, public spaces. In the event that all classes go online this semester, Subject Tutoring will remain available online, too. Schedule an appointment at www.roanoke.edu/tutoring or contact us at 540-375-2590 or subject_tutoring@roanoke.edu. We hope to see you soon!

Writing Center

The Writing Center @ Roanoke College, located on the Lower Level of Fintel Library, offers tutorials focused on writing projects and oral presentations for students working in any field. Writers and presenters at all levels of competence may consult the Writing Center at any point in their process—including brainstorming, drafting, organizing, editing, or polishing presentation skills—to talk with trained peer tutors in informal, one-on- one sessions. Schedule a virtual or in-person appointment by going to www.roanoke.edu/ writingcenter, where our staff members and workshops are also posted. If it becomes necessary to temporarily discontinue face-to-face services at any time, online tutorials will still be available. Questions? Email writingcenter@roanoke.edu or call 375-4949.

Disability Support Services

The Office of Disability Support Services, located in the Goode-Pasfield Center for Learning and Teaching in Fintel Library, provides reasonable accommodations to students with identified disabilities. Reasonable accommodations are provided based on the diagnosed disability and the recommendations of the professional evaluator. In order to be considered for disability services, students must identify themselves to the Office of Disability Support Services. Students requesting accommodations are required to provide specific current documentation of their disabilities. Please contact Rick Robers, M.A., Coordinator of Disability Support Services, at 540-375-2247 or e-mail robers@roanoke.edu. If you are on record with the College's Office of Disability Support Services as having academic or physical needs requiring accommodations, please schedule an appointment with Mr. Robers as soon as possible. You need to discuss your accommodations with him before they can be implemented. Also, please note that arrangements for extended time on exams, testing, and quizzes in a distraction-reduced environment must be made at least one week before every exam.

Topics

This course expects you to spend at least 12 hours of work each week inside and outside of class.

- Numbers, Variables, Operators
- Flow of Control
- Iteration
- Events
- Functions
- Sensing
- Boolean Algebra
- Digital Logical
- Addition Circuits
- Decision Tree
- Graphs

- Finite State Automatons

Exams

Midterm: Tuesday, September 29

Final: Thursday, November 19, Group A: 1:00 - 2:50 Group B: 3:00 - 4:50