# CS153a: Mobile App Development

## Contact Details

Professor Timothy Hickey
Office location:  on zoom at

Zoom link: https://brandeis.zoom.us/j/994399878
Telephone: (617) 935-9065 (cell)
Email: tjhickey@brandeis.edu

## Meeting Times

**Classes**
MTWR 11:15-1:15

**Office Hours**
MTWR 1:30-3:00

**Location:** TBA on Latte

## Course Description

**Learning Goals:**
After successfully completing this course you will be able to design, develop, debug, and deploy mobile applications on iOS and Android platforms using the React-Native framework.

The React framework is one of the most popular and versatile client-side frameworks for developing User Interfaces for web and mobile applications. There is a substantial set of additional skills you will need to develop to succeed in this course. This includes learning Javascript and some frameworks including React-Native and Expo. You will also need to master several software development tools including VScode, Github, Zenhub, the Javascript Console, and agile software development methodologies such as Scrum.

After completing this course you will be able to work effectively alone and in a team to create mobile apps that run on Android or iOS platforms as well as on the Web and you will have developed some interesting individual apps for your ePortfolio.

**Teaching/learning strategies**
The course will require you to read online textbooks and online software manuals as well as to use google and other search tools  such as StackOverflow to find answers to questions and

fixes for bugs. The class will be formed into teams and each team will be responsible for building a suite of Mobile Apps using React Native over the five week course. Daily lessons will mix lectures, coding challenges with your team, and reflections..

**Prerequisites**

The only prerequisite is an ability to program in some Object Oriented Languages such as Python, Java, Javascript, or Ruby, e.g. completing CS10a or CS12b will adequately prepare you for this course.

**Credit Hours:**

This course gives you 4 credit hours and will require 12 hours/week of class time in addition to substantial time outside of class working on homework assignments.

# Course Requirements

**Academic Integrity**

Every member of the University community is expected to maintain the highest standards of academic integrity. A student shall not submit work that is falsified or is not the result of the student's own effort. Infringement of academic honesty by a student subjects that student to serious penalties, which may include failure on the assignment, failure in the course, suspension from the University or other sanctions (see section 20 of R&R). Please consult Brandeis University Rights and Responsibilities for all policies and procedures related to academic integrity. Students may be required to submit work to TurnItIn.com software to verify originality. A student who is in doubt regarding standards of academic honesty as they apply to a specific course or assignment should consult the faculty member responsible for that course or assignment before submitting the work. Allegations of alleged academic dishonesty will be forwarded to the Department of Student Rights and Community Standards. Citation and research assistance can be found at Brandeis Library Guides - Citing Sources (https://guides.library.brandeis.edu/c.php?g=301723).

**Assignments**

This course will have five creative assignment in which you demonstrate your mastery of the skills and concepts learned in the previous weeks. Each creative assignment will build on the previous one leading to a final project you can use in your ePortfolio.

**Exams/Quizzes**

Every Tuesday and Thursday we will have a quiz with one question for each of the core concepts covered so far. We follow a mastery learning approach so the questions are graded with a binary scale: either you have mastered them or you have not. If you demonstrate

mastery you can skip all future questions on that skill, if not then you can continue to answer questions to demonstrate mastery.

**Participation**
Class participation is critical for success in this course. You will be working with your team in class and the class time will provide you the opportunity to ask questions and discuss challenges.  Participation will be tracked using the Peer Review App.

**Portfolio**
The main work product for this course will be a final project which will be part of your college ePortfolio and can help you when searching for jobs or internships..

# Evaluation

You will receive a weekly, individual, grade for your participation in the course and your work on your term project. We will use Mastery Grading for quizzes. This means that each quiz or assignment has points for particular skills and you either get the point or you don't, there is no partial credit. Progressive grading of the term project assignments will allow you to makeup any missed points in the next assignment.

## Grading:
Participation 10%
Creative Assignments 50%
Quizzes 40%

# Essential Resources

## Accommodations
Brandeis seeks to welcome and include all students. If you are a student who needs accommodations as outlined in an accommodations letter, I want to support you. In order to provide test accommodations, I need the letter more than 48 hours in advance. I want to provide your accommodations, but cannot do so retroactively. If you have questions about documenting a disability of requesting accommodations, please contact Student Accessibility Support (SAS https://www.brandeis.edu/accessibility/) at 781.736.3470 or access@brandeis.edu.

## Course Materials

We will use online resources to learn React-Native. Our main text will be available for free from the Brandeis library:
React and React Native, 3rd Edition
https://learning.oreilly.com/library/view/react-and-react/9781839211140
We will also use the ReactNative website and its tutorials and documentation:
https://reactnative.dev

**Apps or Tools/Equipment**

You will need to download and install a lot of software, mainly using npm. We will spend the first day in class downloading software and setting it up.

**LATTE**

LATTE is the Brandeis learning management system: http://latte.brandeis.edu. Login using your UNET ID and password.

**Library**

The Brandeis Library collections and staff offer resources and services to support Brandeis students, faculty and staff. These include workshops, consultations, collaboration, materials and instruction on emerging trends in technologies such as machine learning, emerging trends in research such as data visualization, and emerging trends in scholarship such as open access. Librarians at the Circulation Desk, Research Help Desk, Archives & Special Collections, Sound & Image Media Studios, MakerLab, AutomationLab, and Digital Scholarship Lab are available to help you. https://www.brandeis.edu/library/about/index.html

**Privacy**

This class requires the use of tools that may disclose your coursework and identity to parties outside the class. To protect your privacy, you may choose to use a pseudonym/alias rather than your name in submitting such work. You must share the pseudonym/ alias with me and any teaching assistants as needed. Alternatively, with prior consultation, you may submit such work directly to me.

**Student Support**

Brandeis University is committed to supporting all our students so they can thrive. The following resources are available to help with the many academic and non-academic factors that contribute to student success (finances, health, food supply, housing, mental health counseling, academic advising, physical and social activities, etc.). Please explore the many links on this Support at Brandeis page (https://www.brandeis.edu/support/undergraduate-students/browse.html) to find out more about the resources that Brandeis provides to help you and your classmates to achieve success.

## Course Plan

Unit 1:  Introduction to Javascript and React-Native
We will give an introduction to React-Native.  We will also learn the core concepts behind HTML, CSS, Bootstrap, Javascript, React, Git and Scrum.  Our main goal will be to get familiar with javascript and the React Native core concepts.

Unit 2: Interactivity and Persistence
We learn how to incorporate interactivity in an app using Event Handling and Error Handling. We'll also look at ways to make data persist.

Unit 3: Server-side interaction
We learn a minimal level of server side app development so that our mobile app can interact with a server to store and retrieve information.

Unit 4: Final Project showcase
We apply all we have learned to complete the Term Projects and we have a Final Project showcase.