

SDET 373: Mobile App Development

The world is becoming increasingly mobile. SDET 373 aims to teach students the fundamental basics of learning how to build cross platform mobile apps using web technologies and Cordova (as a wrapper) to launch IOS and android applications.

Instructor:

Professor Daniel Nasello

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Office Hours:

- 3 total hours for online meetings via WebEx. Students should email at least 24 hours in advance for setting up an online session.

Office Hours Policy:

Please come prepared with your fully documented attempted work. This will help maintain fairness in the class for other students as well as ensure an efficient use of everyone's time. Students who do not show prior attempt of their work during the office hours may be asked to attempt the problem before receiving consulting time.

Study Material:

All study material will be released via Canvas. No particular textbook is required for this class. Instead, notes and slides will be provided for study. Publicly available and/or proprietary articles, videos, tutorials, and datasets will be used in this class.

Course Structure:

Students will complete multiple mini projects throughout the semester leading to a final weather application using all of the combined knowledge throughout the course

Learning Objectives:

By the end of the course, students will be able to:

1. How to create webpages using HTML/CSS
2. Know how to create keyframe animations using CSS
3. How to execute DOM functions using Javascript
4. How to import external libraries for use
5. How to store data locally and persistently on the phone
6. How to use APIs (3rd party web data)
7. How to deploy an app using cordova

Table 1: Topical Breakdown (tentative - subject to change)

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Week #	Topic	Activities	Learning Outcome
1	Introduction to Mobile App development	- introduction to the technologies used in the class	This week we will discuss the basics of what we will be doing this semester. We will go over the differences between purely native apps and hybrid apps made with HTML5 technologies. We will also go over apps in general, the app stores, HTML5, CSS, and JavaScript
2	Introduction to HTML	-Learn HTMLML -Setup enviornments	This week we HTML elements, tags, and all it has to offer. We will also go over SPA (single page applications). HTML elements are the backbone in making great single page HTML5 applications.
3	CSS	--Introduction to CSS	This week (and next week), we will be going over CSS(cascading style sheets). This week we will go over the basics such as the different position types, background-colors, gradients, shadows, border-radius's and background images.

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4	CSS continued	-more advanced use of CSS and introduction on how to use CSS functions	This week we will go in to more advanced CSS including: Platform specific CSS (either iPhone or Android depending on your section), animations, transitions, key-frames.
5	Beginning Animations	- introduction on how to use animations	This week we will look into the world of page transitioning, animating elements in and out of the "DOM", and the different types of Animations/transitions
6	Animations Contd.	-continuance of animations and their applied use in CSS	Libraries are great, however we still need to know what is going on beneath the hood. This week we will go over and create our own custom key-frame animations.
7	Midterm	- an in class project in groups of 3	Create a project in class that combines the skills used so far
8	Intro to JavaScript	- Learn the basics of JavaScript and functions	This week we will go over the basics of JavaScript. CSS selectors, Targeting DOM elements, performing actions
9	JavaScript Contd	- Target the dom -manipulate the UI	Review how to manipulate the webpage and data on the screen

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		-manipulate data	using javascript functions. How to properly organize scripts.
10	Local Storage/Web SQL Part 1:	- Introduction to web persistent storage and web databases (local)	This week we will go over the basics of Client side storage. We will go over “Local Storage” key/value pairs. We will also be introduced to Web SQL . Which is SQL Lite database. Both of these storage methods are very powerful.
11	Local Database Extreme:	- all the operations of local databases	This week we will go over the depths of Databases . Select, Insert, Delete, and Modify.
12	Web Data.	- How to use and parse webdata	Web Data might be one of the most important parts of making useful content, and information rich phone applications. Introduction to JSON
13 - 15	End Project	-use all skills combined to create a project (changes every year)	Create a project with cumulative skills

Table 2: Numerical grade breakdown

Item*	Breakdown**
Assignments	30
Midterm Exam	30
Final Exam	30
Attendance	10
Total	100/100

Policies

1. No late submissions/presentations will be accepted, except for valid medical reasons or prior arrangement with Dr. Abichandani.
2. Plagiarism will result in zero (0) points. Additionally, all academic policies set forth by NJIT University will be followed. NJIT has a zero-tolerance policy regarding cheating of any kind and student behavior that is disruptive to a learning environment. Any incidents will be immediately reported to the Dean of Students. Please visit the Dean of Students website at <http://www.njit.edu/doss> for a list of student policies relating to academic integrity and student conduct.
3. All NJIT policies regarding adding, dropping, and withdrawing from courses will be followed. In order to insure consistency and fairness in application of the NJIT policy on withdrawals, student requests for withdrawals after the deadline (end of the 9th week of classes) will not be permitted unless extenuating circumstances are documented. The course instructor and the Dean of Students are the principal points of contact for students considering withdrawing from a course.
4. When a student invokes extenuating circumstances for any reason (late withdrawal from a course, request for a make-up exam, request for an Incomplete grade) the student will be referred to the Dean of Students Office. The Dean of Students will be making the determination of whether extenuating circumstances exist or not and will be notifying the instructor accordingly. Instructors will never request or accept medical or other documents from students; such documents need to be submitted by the student to the Dean of Students.
5. Student with disabilities requesting accommodations and services at NJIT need to present a current Letter of Accommodation Eligibility from the Disability Support Services office authorizing student accommodations to faculty before accommodations can be made. For additional information, contact The Disability Support Services office (<http://www.njit.edu/studentsuccess/disability-support-services-0/>)
6. Final letter grades will depend on the final numerical grades and will follow letter grade cutoffs provided below. The final numerical grades will be ascertained based on the statistical analysis performed at the end of the term.

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Letter Numeric Grade

A	90 and Above
B+	85 to 89.9
B	80 to 84.9
C+	75 to 79.9
C	70 to 74.9
D	60 to 69.9
F	Below 60

7. E-mail Etiquette and Policy:

In general, it is preferred that class related questions be asked during class, so that everyone can benefit from the discussion. If your answer requires a longer time to answer, please ask in person outside or after class. You may ask questions over email if the instructor is unavailable.

It is recommended that students email the professor well in advance of an upcoming deadline. Emails received 24-36 hours prior to a deadline may not be answered prior to the deadline.

Business etiquette for electronic communications must be adhered to when asking course related questions. This includes a formal greeting (for example: Dear Professor Abichandani), a subject line, formal language, and a formal signature line (including your full name and Student ID). Emails that do not follow proper etiquette might not be answered. Please make sure your NJIT e-mail account is active and checked daily for class communication and updates.

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Sample e-mail:

Subject: SDET 373: Homework 2 Related Question

Body:

Dear Professor Abichandani,

This is John Doe from your SDET 373 class, I have a question concerning Homework 2. I am confused about how to use the command line interface in Linux? Specifically, I am unable to move a file from one folder to the other – here is a screen video of my attempt.

Can you please help me with this?

Thank you,

John Doe

NJIT SID: 123123123

Email: john.doe@njit.edu

Accommodation for Disability

If you have a documented physical and/or learning disability, please feel free to inform me or the NJIT Counseling Center (<http://www.njit.edu/counseling/services/disabilities.php>) regarding what kind of accommodation you need to help you succeed in this class. While you are not required to disclose your disability to me, you must provide appropriate documentation to receive official university assistance. All such requests will be held confidential to the fullest extent possible.

Modification to Course:

The Course Outline may be modified at the discretion of the instructor or in the event of extenuating circumstances. Students will be notified in class of any changes to the Course Outline.