

# CpS 320 Mobile & Distributed App Development 01 Spring 2024

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Office Hours: MWF 9:00–10:50 am  
Th 8:00– 9:50 am  
MWF 12:00–12:50 pm (by appointment)

[Lunch signup](#)

## Course Information

An introduction to fundamental concepts needed to support the development of mobile and distributed applications. Topics include mobile application frameworks, application lifecycle issues, mobile user experience design, and client-server programming. *Prerequisite: CpS 209. 3 credits.*

## Overview

This course tackles the technologies used and issues involved in the development of mobile applications. The course covers technologies, tools, and techniques used to build applications that are secure, efficient, maintainable, using the Flutter platform.

This is an advanced class in our computer science program. Strong programming proficiency is expected. Expect to spend several hours a week writing code. The instructor will present key concepts and coding techniques in class, but students are expected to do their own research and reading in order to successfully complete assignments.

## Computer Requirements

See the [Windows](#) or [MacOS](#) system requirements for creating **Android** apps.

## Course Resources

- [Dart documentation](#)
- [Flutter documentation](#)
- Textbook (optional): *Pragmatic Flutter: Building Cross-Platform Mobile Apps for Android, iOS, Web, & Desktop* by Priyanka Tyagi, published by CRC Press, 6000

## Grading

				Scale	
<b>Assessments</b>					
Qty	Item	Points	Total		
				A	90-100%
6	Programs	100	600	B	80-89%
1-3	Quizzes	20	20-60	C	70-79%
4	Written Tests	100	400	D	60-69%
<b>Total Points:</b> 1020+				F	<60%

## Course Policies

In this course, topics builds on the previous topic. Thus, if you fall behind, you will struggle with new content. For this reason, I do not accept late work. Work is due at the deadline. **Late work receives a 0.** Notify me immediately if a situation arises necessitating an **extension.** Early, impressive work is encouraged and may result in extra credit.

## Professionalism

University classes are a place to sharpen your professional habits. Arrive on time. Dress appropriately. Engage with the material. Take pride in your work. Build relationships. Encourage growth in others.

## University Policies

## Handbook Policies

Compliance with student handbook policies is expected during class.

## Attendance Policy

You are expected to attend class and be on time: <https://home.bju.edu/bju-policies/>. A partial attendance will be recorded when you miss the beginning or end of a class. If you miss more than 15 minutes of class, you will be marked absent. Students who exceed the 3 allowed absences may be withdrawn from class.

If you need to miss class any reason, please contact me as soon as possible. Assignments and tests should be completed before planned absences.

## Accommodations for Students with Disabilities

Students are required under Section 504 to communicate the need for accommodations and provide documentation to the Academic Resource Center Accommodations Office in AL 213. Visit <https://success.bju.edu/> for more information. Students are encouraged to seek an appointment in the first week, as accommodations are not provided retroactively.

## Academic Honesty and Integrity Policy

See the [Computer Science Department's Academic Integrity Policy](#).

Taking credit for someone else's work is unethical in any setting. In a university setting, it undermines the ability of faculty to accurately evaluate your competence, harming you and the reputation of the department. For these reasons, the penalties for academic dishonesty may be severe.

## Generative AI

Since the goal of the assignments in this course is to learn to develop the skills covered NOT complete the tasks assigned, and since the use of AI to complete or jumpstart tasks defeats the goal of the assignments, you may not use generative AI tools (i.e. Chat GPT, Bing Chat, Google Bard, etc.) in this course for any assignment without the professors express permission. Should an AI tool be used with permission, its use must be documented.

## Curriculum Information

### Context

This course supports the following objectives of the Computer Science program:

CS 1. Design and implement solutions to practical problems

CS 2. Use appropriate technology as a tool to solve problems in various domains

<b>Objective Content Assessment</b>	<b>Content</b>	<b>Assessment</b>
Construct small mobile and distributed applications	Lectures, Flutter documentation	Programs 2-6, Test 2 and 3, Final Exam
Use asynchronous programming techniques to maintain app responsiveness	Lectures, Flutter documentation	Programs 4-6
Create user interfaces based on accepted mobile user	Lectures, Flutter documentation	Programs 2-4, 6
Use appropriate back-end technology to store and retrieve data in the cloud	Lectures, Django/Docker documentation	Program 5

## Tentative Schedule

<b>Day</b>	<b>Topic</b>	<b>Due</b>
Wed, Jan 10	Introduction, Installation	
Fri, Jan 12	Dart	
<i>Mon, Jan 15</i>	<i>MLKj Day</i>	
Wed, Jan 17	Dart	
Fri, Jan 19	Dart	
Mon, Jan 22	Flutter setup and use	
Wed, Jan 24	Flutter UI's	Quiz 1
Fri, Jan 26	Test 1	<a href="#">Program 1: Dart</a> (Sat)
Mon, Jan 29 ( <a href="#">Lunch</a> )	Data persistence	
Wed, Jan 31	Authentication	
Fri, Feb 02	Server setup	<a href="#">Program 2a: Configuration</a> (Sat)
Mon, Feb 05	Server connection	
Wed, Feb 07	Secure communication	
Fri, Feb 09	Data integrity	

Mon, Feb 12 ( <a href="#">Lunch</a> )	Location tagging, Test 2 topics	
Wed, Feb 14	<i>Bible Conference</i>	
Fri, Feb 16	<i>Bible Conference</i>	
Mon, Feb 19	Account creation	Program 2: Flutter
Wed, Feb 21	Test 2	
Fri, Feb 23	Two-factor authentication	
Mon, Feb 26 ( <a href="#">Lunch</a> )		
Wed, Feb 28	Account management	
Fri, Mar 01	Uploading score	
Mon, Mar 04	Downloading high scores	
Wed, Mar 06	Account Deletion	
Fri, Mar 08		Program 3: account management
Mon, Mar 11 ( <a href="#">Lunch</a> )	Types of Messages	
Wed, Mar 13		
Fri, Mar 15	Two-way communication	
Mon, Mar 18	<i>Spring Break</i>	
Wed, Mar 20	<i>Spring Break</i>	
Fri, Mar 22	<i>Spring Break</i>	
Mon, Mar 25 ( <a href="#">Lunch</a> )	Camera access, Test 3 topics	
Wed, Mar 27	Server UI's	
Fri, Mar 29	Emergency alerts	Program 4: Messaging
Mon, Apr 01	Test 3	
Wed, Apr 03	<i>University Service Day</i>	
Fri, Apr 05	Changing terms	

Mon, Apr 08 (Lunch)		
Wed, Apr 10	Wiping data	
Fri, Apr 12		Program 5: HR Interface
Mon, Apr 15	Database structure	
Wed, Apr 17		
Fri, Apr 19	Coordinating Reports	
Mon, Apr 22 (Lunch)	Deploying	
Wed, Apr 24		
Fri, Apr 26		Program 6: HR App
Thursday, May 2	8–9:10 a.m.	

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