**CENTRAL UNIVERSITY**

**SCHOOL OF ENGINEERING AND TECHNOLOGY**

**DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY**

**Course Code**: ITEC 411 **Credit Hour(s)**:**3**

**Course Title**: **Mobile Application Development**

**Course Lecturer: Lorraine Johnson**

**Email Address: ljohnson@central.edu.gh Tel no.: 0244143136**

**Office Hours:**

# Course Objective

The objective of the Mobile Application Development course is to equip students with the essential knowledge and practical skills required to design, develop, and deploy mobile applications.

# Course Description

**Course Description:**

This course provides a comprehensive introduction to mobile application development. Students will gain hands-on experience in designing, developing, and deploying mobile applications. Topics include user interface design, data management, multi-platform development, and best practices in mobile app development. Through a combination of lectures, practical exercises, and projects, students will acquire the skills necessary to create functional and user-friendly mobile applications.

Specifically, the course will look at the tools used to design mobile applications, mobile platforms, mobile browsers, native applications, and best practices in terms of test usability.

**Special Application to be used:**

**Android studio**

**Flutter SDK**

**Teaching Methods**

1. Face to face classroom lecture
2. Practical/Lab Work
3. Assignments, Presentations and Classwork

# Required Course Materials and Readings

* Almo, A. (2021). Flutter for Beginners: An introductory guide to building cross-platform mobile applications with Flutter and Dart 2. Packt Publishing.
* Breville, J. (2020). Flutter in Action. Manning Publications.
* Brunetti, A. (2019). Learning Dart - Second Edition: Build structured and scalable web applications. Packt Publishing.
* Collins, M., & Robertson, T. (2020). Google Flutter Mobile Development Quick Start Guide: Get up and running with iOS and Android mobile app development. Packt Publishing.
* Felker, D. (2022). Effective Flutter: Develop beautiful native mobile apps in record time. Pragmatic Bookshelf.
* Fitzgerald, C. (2021). Beginning App Development with Flutter: Create Cross-Platform Mobile Apps. Apress.
* Simone, A. (2022). Flutter Cookbook (2nd ed.). O'Reilly Media.

# Evaluation

Class test, quizzes, mid-semester exams, term project and end of semester exams.

# Commitment To Academic Integrity

Students in the department are expected to maintain **high degrees of professionalism, commitment to active learning, participation, and academic integrity every time**.

# Academic Dishonesty

Please note that students involved in academic dishonesty will receive a **ZERO** mark on the component in which the infraction occurred and a notation of academic dishonesty in the departmental office. This may also reflect on references written by the department.

**It is the student’s responsibility to understand what constitutes academic dishonesty.**

# Missed Exams / Tests / Assignments

**Assignment Submission**: Assignments must be received on the due date specified for the assignment.

**Lateness Penalty:** Assignments received later than the due date will be penalized Exceptions to the lateness penalty for valid reasons such as illness, etc., may be entertained by the Lecturer but will require supporting documentation (e.g., a doctor’s letter).

**Missed Tests:** Students with a documented reason for missing a course test, such as illness, which is confirmed by supporting documentation (e.g., doctor’s letter) will be handled by the Lecturer.

**WEEK BY WEEK COURSE SCHEDULE / ORGANISER:**

| **Topic** | **Weeks** |
| --- | --- |
| **Introduction to Mobile App Development**   * Overview of mobile app development * Introduction to Flutter and its advantages * Setting up development environment | 1-2 |
| **Dart Programming Language**   * Basics of Dart programming * Variables, data types, and control structures * Functions and object-oriented programming in Dart | 3-4 |
| **Flutter Fundamental**   * Flutter widgets and layout design * Handling user input and gestures * Navigation and routing in Flutter | 5-6 |
| **UI/UX Design in Flutter**   * Design principles for mobile applications * Styling and theming in Flutter * Responsive design and adaptation to different screen size | 7-8 |
| State Management and Data Handling   * Managing state in Flutter apps * Asynchronous programming in Dart * Working with local databases and file storage | 9-10 |
| **Testing, Debugging, and Deployment**   * Testing strategies for Flutter applications * Debugging techniques and tools * Deploying apps to Android platforms | 11-12 |
| * Semester Project Presentation |  |
| * Semester Project Presentation | Lecturers end |
|  | Revision Week |
|  | Exams begin |
|  | Exams end / vacation |