

CS/IS132 : Mobile Application Development - Android

General Information

Author:	<ul style="list-style-type: none">Vladimir Paransky
Course Code (CB01) :	CS/IS132
Course Title (CB02) :	Mobile Application Development - Android
Department:	CSIS
Proposal Start:	Fall 2022
TOP Code (CB03) :	(0707.00) Computer Software Development
CIP Code:	(11.0201) Computer Programming/Programmer, General.
SAM Code (CB09) :	Clearly Occupational
Distance Education Approved:	No
Will this course be taught asynchronously?:	No
Course Control Number (CB00) :	CCC000574114
Curriculum Committee Approval Date:	Pending
Board of Trustees Approval Date:	Pending
Last Cyclical Review Date:	09/01/2020
Course Description and Course Note:	CS/IS 132 provides an introduction to the art and practice of mobile application development for the Android operating system. Students use the software development kit (SDK) to create programs including: how to craft Graphical User Interfaces (GUIs); creating location-based applications; and accessing web services.
Justification:	New Course NT FR
Academic Career:	<ul style="list-style-type: none">Credit
Mode of Delivery:	No value
Author:	No value
Course Family:	No value

Academic Senate Discipline

Primary Discipline:	<ul style="list-style-type: none">Computer Information Systems (Computer network installation, microcomputer technology, computer applications)
Alternate Discipline:	No value
Alternate Discipline:	No value

Course Development

Basic Skill Status (CB08)

Course is not a basic skills course.

Allow Students to Gain Credit by Exam/Challenge

Course Special Class Status (CB13)

Course is not a special class.

Pre-Collegiate Level (CB21)

Not applicable.

Grading Basis

- Grade with Pass / No-Pass Option

Course Support Course Status (CB26)

Course is not a support course

General Education and C-ID

General Education Status (CB25)

Not Applicable

Transferability

Transferable to CSU only

Transferability Status

Approved

Units and Hours

Summary

Minimum Credit Units (CB07)	3
Maximum Credit Units (CB06)	3
Total Course In-Class (Contact) Hours	54
Total Course Out-of-Class Hours	108
Total Student Learning Hours	162

Credit / Non-Credit Options

Course Type (CB04)

Credit - Degree Applicable

Noncredit Course Category (CB22)

Credit Course.

Noncredit Special Characteristics

No Value

Course Classification Code (CB11)

Credit Course.

Variable Credit Course

Funding Agency Category (CB23)

Not Applicable.

Cooperative Work Experience Education Status (CB10)

Weekly Student Hours

	In Class	Out of Class
Lecture Hours	3	6
Laboratory Hours	0	0
Studio Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	0
Course In-Class (Contact) Hours	
Lecture	54

Laboratory	0
Studio	0
Total	54

Course Out-of-Class Hours

Lecture	108
Laboratory	0
Studio	0
Total	108

Time Commitment Notes for Students

No value

Units and Hours - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Pre-requisites, Co-requisites, Anti-requisites and Advisories

Prerequisite

CS/IS112 - Introduction To Programming Using Java

Objectives

- Examine problems, apply logic, and provide solutions/algorithms for the problems
- Show the solution/algorithm using flowcharts or pseudocode
- Utilize a compiler to write, debug, and test Java programs

Entry Standards

Entry Standards	Description
analyze problems and give logical solutions to them using flowcharts or pseudocode;	No Value
code, debug, and test programs;	No Value

demonstrate understanding of using a computer for programming.

No Value

Course Limitations

Cross Listed or Equivalent Course

Description

No value

No value

Specifications

Methods of Instruction

Methods of Instruction

Lecture

Methods of Instruction

Multimedia

Methods of Instruction

Demonstrations

Out of Class Assignments

individual and/or group project (e.g. develop and deploy mobile applications such as a mashup of maps and XML).

Methods of Evaluation

Rationale

Exam/Quiz/Test

final examination.

Exam/Quiz/Test

midterm examinations and quizzes;

Exam/Quiz/Test

performance-based assessment of student-written applications;

Exam/Quiz/Test

instructor evaluation of student portfolio work;

Textbook Rationale

No Value

Textbooks

Author

Title

Publisher

Date

ISBN

Murach, Joel

Murach's Android Programming

Mike Murach &
Associates

2015

978-1890774936

Other Instructional Materials (i.e. OER, handouts)

No Value

Materials Fee

No value

Learning Outcomes and Objectives**Course Objectives**

Utilize the mobile development environment;

create Graphical User Interfaces (GUIs) using controls, layout managers, adaptors, menus and dialogues;

utilize the distinctive capabilities of mobile environment, including location tracking, maps and Internet access.

SLOs**Create, design and debug mobile applications**

Expected Outcome Performance: 70.0

<i>ILOs</i> Core ILOs	Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.
	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.
<i>CSIS</i> Information Technology Certificate	Demonstrate installing, configuring and maintaining computer and mobile devices, including diagnosing, resolving and documenting common hardware and software.
<i>CSIS</i> Information Technology - A.S. Degree Major	Demonstrate installing, configuring, and maintaining computer and mobile devices, including diagnosing, resolving, and documenting common hardware and software.
<i>CSIS</i> Computer Science - A.S. Degree Major	Prepare a software project to implement a single scientific, mathematical, business, or technical function.
<i>CSIS</i> Computer Science - Certificate	Prepare a software project to implement a single scientific, mathematical, business, or technical function.
<i>CSIS</i> Computer Software Technician	demonstrate the ability to independently create, save, modify and print a document using a word processing program and appropriate assistive technology
<i>CSIS</i> Web Development - Certificate	use industry standard tools and techniques to produce, publish and maintain Web sites and Web content.

CS/S
Web Development - A.S. Degree
Major

use industry standard tools and techniques to produce, publish and maintain Web sites and Web content.

Implement mobile applications incorporating activities, services, content providers and broadcast receivers

Expected Outcome Performance: 70.0

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Degree Major

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CS/S
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Major

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CS/S
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demonstrate the ability to independently create, save, modify and print a document using a word processing program and appropriate assistive technology

CS/S
Web Development - A.S. Degree
Major

use industry standard tools and techniques to produce, publish and maintain Web sites and Web content.

CS/S
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use industry standard tools and techniques to produce, publish and maintain Web sites and Web content.

Use Model–view–controller (MVC) model to create layout managers, adapters, menus and dialogues

Expected Outcome Performance: 70.0

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Course Content

Lecture Content

Overview of Android (10 hrs)

- Mobile Operating Systems (OS) Composition
- Software Development Kit (SDK) and Mobile OS

Developer Tools

- Fundamental Components
- View
- Activity
- Intent
- Content Provider
- Service •
- Structure of a Mobile Application
- Application lifecycle
- Debugging

Resources (10 hrs)

- String
- Layout
- Resource-reference syntax
- Compiled and non-compiled
- Arbitrary Extensible Markup Language (XML) resource files
- Raw resources
- Assets
- Resources directory structure

Content providers (3 hrs)

- Built-in
- Architecture
- Implementing

Intents (4 hrs)

- Available intents
- Intents and data URI (Uniform Resource Locator)
- Generic actions
- Using components to directly invoke an activity

Building UIs (User Interfaces) (15 hrs)

- UI development
- Controls (txt, button, grid, date and time)
- Layout Managers (linear, table, relative, absolute and frame)
- Adapters (simple cursor and array)
- Menus (expanded and loading)
- Dialogues (alert, prompt and managed)

Security (4 hrs)

- Overview of security concepts
- Signing applications for deployment
- Performing runtime security checks

Location-Based Services (4 hrs)

- Mapping package (map view and map activity)
- Location package

Databases and Content Providers (4 hrs)

- SQLite
- SQLiteOpenHelper
- Opening
- Querying
- Extracting
- Content providers
- Creating
- Using

- Native Android content providers

Total hours - 54