# COURSE OUTLINE: MAP103 - ANDROID DEV STUDIO

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Approved: Corey Meunier, Chair, Technology and Skilled Trades

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| **Course Code: Title** | MAP103: ANDROID DEVELOPMENT USING ANDROID STUDIO |
| **Program Number: Name** | 2190: MOBILE APPS DESIGN |
| **Department:** | COMPUTER STUDIES |
| **Semesters/Terms:** | 18F |
| **Course Description:** | In this course, students will develop apps for mobile devices on the Android operating system. The course begins with the fundamentals of programming using Java. Later the student will move on to Android development using Android Studio. Weekly lab activities are used to reinforce student learning. |
| **Total Credits:** | 5 |
| **Hours/Week:** | 5 |
| **Total Hours:** | 75 |
| **Prerequisites:** | There are no pre-requisites for this course. |
| **Corequisites:** | There are no co-requisites for this course. |
| **Vocational Learning Outcomes (VLO's) addressed in this course:**<br><br>**Please refer to program web page for a complete listing of program outcomes where applicable.** | **2190 - MOBILE APPS DESIGN**<br>VLO 3 Develop application and user interfaces for various mobile platforms that leverage evolving mobile device capabilities.<br>VLO 7 Evaluate and implement new features for current IOS, Android and other platforms to meet client needs. |
| **Essential Employability Skills (EES) addressed in this course:** | EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication.<br>EES 3 Execute mathematical operations accurately.<br>EES 4 Apply a systematic approach to solve problems.<br>EES 5 Use a variety of thinking skills to anticipate and solve problems.<br>EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.<br>EES 10 Manage the use of time and other resources to complete projects.<br>EES 11 Take responsibility for ones own actions, decisions, and consequences. |
| **Course Evaluation:** | Passing Grade: 50%, D |
| **Other Course Evaluation & Assessment Requirements:** | The student must pass both the lab and test portions of the course.<br><br>Attendance:<br>Sault College is committed to student success. There is a direct correlation between academic performance and class attendance, therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.<br><br>Absences due to medical or other unavoidable circumstances should be discussed with the |

instructor. Students are required to be in class on time and attendance will be taken within the first five minutes of class.

Absentee reports will be discussed with each student during regular meetings with Faculty Advisors.

Grade
Definition Grade Point Equivalent
A+ 90 - 100% 4.00
A 80 - 89%
B 70 - 79% 3.00
C 60 - 69% 2.00
D 50 - 59% 1.00
F (Fail) 49% and below 0.00
CR (Credit) Credit for diploma requirements has been awarded.
S Satisfactory achievement in field /clinical placement or non-graded subject area.
U Unsatisfactory achievement in field/clinical placement or non-graded subject area.
X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR Grade not reported to Registrar`s office.
W Student has withdrawn from the course without academic penalty

**Books and Required Resources:**

Android Programming (The Big Nerd Ranch Guide) by Bill Phillips
Publisher: Pearson Edition: 3
ISBN: 9780134706078

**Course Outcomes and Learning Objectives:**

| **Course Outcome 1** | **Learning Objectives for Course Outcome 1** |
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| Introduction to Android development, Android Studio and the user interface. | 1.1 Understand the history of Android development and what is required to build Android apps.<br>1.2 Use Android Studio, Android virtual devices, and physical devices to build and test Android apps.<br>1.3 Explore the structure of Android apps using the Model-View-Controller (MVC) paradigm.<br>1.4 Understand XML layout files and the conversion to view objects.<br>1.5 Build accessible Android user interfaces.<br>1.6 Describe what widgets are. |
| **Course Outcome 2** | **Learning Objectives for Course Outcome 2** |
| Introduction to Java, Java programming and Java in Android development. | 2.1 Understand this history of Java and Java syntax.<br>2.2 Write classes using inheritance and polymorphism.<br>2.3 Use data types, conditional statements, loops and string interpolation.<br>2.4 Work with arrays, lists, maps and sets.<br>2.5 Analyze and improve code quality.<br>2.6 Understand how Java is used in Android app development. |
| **Course Outcome 3** | **Learning Objectives for Course Outcome 3** |
| Working with activities, using fragments to construct the user interface and implementing layouts and constraints. | 3.1 Understand the activity and fragment lifecycle.<br>3.2 Describe how to use multiple activities.<br>3.3 Explore the app architecture with fragments.<br>3.4 Use the fragment manager to handle fragments and fragment transitions.<br>3.5 Respond to rotation and application states. |

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| | 3.6 Understand different layouts and how to use the constraint layout.<br>3.7 Explore graphical tools for designing and creating layouts. |
| **Course Outcome 4** | **Learning Objectives for Course Outcome 4** |
| The intent and various functions intents provide. | 4.1 Explore common types of intents.<br>4.2 Use intents to pass data between activities.<br>4.3 Understand intent extras.<br>4.4 Use implicit intents to open other applications and activities and access the central contact database.<br>4.5 Describe what broadcast intents are and their purpose. |
| **Course Outcome 5** | **Learning Objectives for Course Outcome 5** |
| Interacting with the user, the user experience and debugging. | 5.1 Understand how to design for user input.<br>5.2 Describe various out-of-the-box user input controls and building custom controls.<br>5.3 Use various tools to interact with the user such as lists, the view pager, dialogs, menus and toolbars.<br>5.4 Explore how localization and internationalization prepares for a global audience.<br>5.5 Apply various methods of debugging. |
| **Course Outcome 6** | **Learning Objectives for Course Outcome 6** |
| Data persistence and data storage. | 6.1 Understand how to persist data temporarily.<br>6.2 Use SQLite to implement data storage.<br>6.3 Explore the application sandbox and how application files are stored.<br>6.4 Save files to the Android device. |

**Evaluation Process and Grading System:**

| Evaluation Type | Evaluation Weight | Course Outcome Assessed |
|---|---|---|
| Lab 1 | 3% | 1 |
| Lab 10 | 3% | 6 |
| Lab 2 | 3% | 2 |
| Lab 3 | 3% | 3 |
| Lab 4 | 3% | 3 |
| Lab 5 | 3% | 34 |
| Lab 6 | 3% | 4 |
| Lab 7 | 3% | 5 |
| Lab 8 | 3% | 5 |
| Lab 9 | 3% | 6 |
| Quiz 1 | 2% | 1 |
| Quiz 10 | 2% | 6 |
| Quiz 2 | 2% | 1 |
| Quiz 3 | 2% | 2 |
| Quiz 4 | 2% | 2 |
| Quiz 5 | 2% | 3 |
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| Quiz 6 | 2% | 3 |
| Quiz 7 | 2% | 4 |
| Quiz 8 | 2% | 4 |
| Quiz 9 | 2% | 5 |
| Test 1 | 15% | 1,2,3 |
| Test 2 | 15% | 4,5,6 |
| Test 3 | 20% | 1,2,3,4,5,6 |

**Date:** September 4, 2018

Please refer to the course outline addendum on the Learning Management System for further information.