



## COURSE OUTLINE: MAP204 - HANDS-ON ANDROID DEV

Prepared: Joshua McColeman

Approved: Corey Meunier, Chair, Technology and Skilled Trades

<b>Course Code: Title</b>	MAP204: HANDS-ON ANDROID DEVELOPMENT
<b>Program Number: Name</b>	2191: MOBILE APPS DESIGN
<b>Department:</b>	COMPUTER STUDIES
<b>Semesters/Terms:</b>	19W
<b>Course Description:</b>	In this course, students will learn to develop Android apps in a hands-on, application-driven approach. In this second Android course, students will extend their skills by learning to research advance Android Application Programming Interfaces (APIs) and create increasingly complex applications. The final capstone project will be based on an individual or group app development scenario.
<b>Total Credits:</b>	5
<b>Hours/Week:</b>	5
<b>Total Hours:</b>	75
<b>Prerequisites:</b>	There are no pre-requisites for this course.
<b>Corequisites:</b>	There are no co-requisites for this course.
<b>Essential Employability Skills (EES) addressed in this course:</b>	<div>EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.</div> <div>EES 3 Execute mathematical operations accurately.</div> <div>EES 4 Apply a systematic approach to solve problems.</div> <div>EES 5 Use a variety of thinking skills to anticipate and solve problems.</div> <div>EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others.</div> <div>EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.</div> <div>EES 10 Manage the use of time and other resources to complete projects.</div> <div>EES 11 Take responsibility for ones own actions, decisions, and consequences.</div>
<b>Course Evaluation:</b>	Passing Grade: 50%, D
<b>Other Course Evaluation &amp; Assessment Requirements:</b>	<p>The student must pass both the lab and test portions of the course.</p> <p>Attendance: 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.</p> <p>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.</p>



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	<p>Absentee reports will be discussed with each student during regular meetings with Faculty Advisors.</p> <p>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</p>												
<b>Books and Required Resources:</b>	<p>Android Programming (The Big Nerd Ranch Guide) by Bill Phillips, Brian Hardy Publisher: Pearson Edition: 3 ISBN: 9780134706078</p>												
<b>Course Outcomes and Learning Objectives:</b>	<table> <tr> <th>Course Outcome 1</th><th>Learning Objectives for Course Outcome 1</th></tr> <tr> <td>What are APIs and Frameworks.</td><td>           1.1 Describe what APIs and Frameworks are.            1.2 Differentiate between APIs and Frameworks and identify their differences.         </td></tr> <tr> <th>Course Outcome 2</th><th>Learning Objectives for Course Outcome 2</th></tr> <tr> <td>VoIP API integration and voice actions.</td><td>           2.1 Understand third-party services and how to utilize them.            2.2 Describe various utilities accessible through the VoIP SDK and REST API.            2.3 Define the necessary security permissions needed to use VoIP.            2.4 Implement making outgoing calls and handling incoming calls.            2.5 Employ enhanced user experience mechanisms such as volume control and a call progress indicator.            2.6 Build a VoIP app.            2.7 Describe how voice actions work and how to handle their Intents.            2.8 Implement a call voice action that will open the VoIPCall app and make a call.         </td></tr> <tr> <th>Course Outcome 3</th><th>Learning Objectives for Course Outcome 3</th></tr> <tr> <td>Google Maps SDK, MapFragment and MapView.</td><td>           3.1 Examine the Google Maps SDK.            3.2 Describe the MapView and MapFragment components.            3.3 Demonstrate the installation and setup of the Google Maps SDK.            3.4 Implement a MapView with map markers in various locations using geographic coordinates.            3.5 Design a Java data model that stores geographical location information.            3.6 Implement MongoDB communication using the MongoDB         </td></tr> </table>	Course Outcome 1	Learning Objectives for Course Outcome 1	What are APIs and Frameworks.	1.1 Describe what APIs and Frameworks are. 1.2 Differentiate between APIs and Frameworks and identify their differences.	Course Outcome 2	Learning Objectives for Course Outcome 2	VoIP API integration and voice actions.	2.1 Understand third-party services and how to utilize them. 2.2 Describe various utilities accessible through the VoIP SDK and REST API. 2.3 Define the necessary security permissions needed to use VoIP. 2.4 Implement making outgoing calls and handling incoming calls. 2.5 Employ enhanced user experience mechanisms such as volume control and a call progress indicator. 2.6 Build a VoIP app. 2.7 Describe how voice actions work and how to handle their Intents. 2.8 Implement a call voice action that will open the VoIPCall app and make a call.	Course Outcome 3	Learning Objectives for Course Outcome 3	Google Maps SDK, MapFragment and MapView.	3.1 Examine the Google Maps SDK. 3.2 Describe the MapView and MapFragment components. 3.3 Demonstrate the installation and setup of the Google Maps SDK. 3.4 Implement a MapView with map markers in various locations using geographic coordinates. 3.5 Design a Java data model that stores geographical location information. 3.6 Implement MongoDB communication using the MongoDB
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		Java driver. 3.7 Produce a user interface for location storage, searching and displaying on the map. 3.8 Describe various MapView events.																										
	Course Outcome 4	Learning Objectives for Course Outcome 4																										
	Introduction to Scrum. Wi-Fi P2P and direct communication. Broadcast receivers and P2P manager.	4.1 Define the Scrum process, why it is used, and the different Scrum roles and responsibilities. 4.2 Describe Wi-Fi P2P, the Wi-Fi P2P API, and how it all works. 4.3 Contrast between Wi-Fi P2P and Bluetooth communication. 4.4 Implement a P2P manager the handles 4.5 Describe how device discovery and connecting works. 4.6 Implement the ability to scan for devices, list nearby devices, select a device to connect to, and connect to that device. 4.7 Define what local services are and the purpose they serve. 4.8 Implement the discovery of services and the consumption of their information. 4.9 Describe the ServerSocket and InputStream objects. 4.10 Build a messaging app to allow the communication of messages between devices.																										
Evaluation Process and Grading System:	<table><tr><th>Evaluation Type</th><th>Evaluation Weight</th></tr><tr><td>Lab 1</td><td>5%</td></tr><tr><td>Lab 10</td><td>5%</td></tr><tr><td>Lab 2</td><td>5%</td></tr><tr><td>Lab 3</td><td>5%</td></tr><tr><td>Lab 4</td><td>5%</td></tr><tr><td>Lab 5</td><td>5%</td></tr><tr><td>Lab 6</td><td>5%</td></tr><tr><td>Lab 7</td><td>5%</td></tr><tr><td>Lab 8</td><td>5%</td></tr><tr><td>Lab 9</td><td>5%</td></tr><tr><td>Test 1</td><td>20%</td></tr><tr><td>Test 2</td><td>30%</td></tr></table>		Evaluation Type	Evaluation Weight	Lab 1	5%	Lab 10	5%	Lab 2	5%	Lab 3	5%	Lab 4	5%	Lab 5	5%	Lab 6	5%	Lab 7	5%	Lab 8	5%	Lab 9	5%	Test 1	20%	Test 2	30%
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Date:	November 27, 2019																											
Addendum:	Please refer to the course outline addendum on the Learning Management System for further information.																											

