MAD-5314 Applications for Wearable Devices

Computer Studies

Course Number:	Co-Requisites:	Pre-Requisites:
MAD-5314	N/A	N/A
Prepared by:	Albert Danison, Outline Creator	
Approved by:	Chris Slade, Dean Computer Studies and International Education	
Approval Date:	Friday, June 8, 2018	
Approved for Academic Year:	2018-2019	
Normative Hours:	60.00	

Course Description

This course covers the topics of design and development of wearable applications for Android Wear and Google Fit. This course provides a history, background, and core concepts of wearable computing and ubiquitous computing, smartwatch, fitness devices and sensors.

Course Learning Outcomes/Course Objectives

1. **Discuss the history and impact of wearable computing and how it is leveraged for the future.**
   - 1.1 Discuss the impact of wearable computing, computers and technology.
   - 1.2 Identify wearables, smart phones and thier interaction with users.
   - 1.3 Discuss wearable computing history and marketing trends.
   - 1.4 Analyze the human computer relationship and ubquitious computing.
   - 1.5 Analyze security and privacy issues that affect wearables.

2. **Analyze Android foundations and the application development model.**
   - 2.1 Discuss the Android platform and its relation to Linux.
   - 2.2 Analyze the use of Java, Apache Harmony and the method of setting up an Android development environment.
   - 2.3 Analyze and use classic project tree and build system, manage java installation and Android Lollipop.
   - 2.4 Use the Android application development model.
   - 2.5 Analyze Android, dalvik, java and org packages, sub packages.
   - 2.6 Discuss Android connectivity, Bluetooth, Wi-Fi, and Near Field communications.

3. **Analyze and construct applications using th Android Wear platform and API.**
    - 3.1 Discuss the Android Wear platform including Google Now, Android Ware and devices.
    - 3.2 Create a Wear App.
    - 3.3 Discuss Google services, Google Play Services, and Wear network.
    - 3.4 Experiment with API, DataItem, DataMapItem, and asset types.
    - 3.5 Experiement with the Wearable UI Library and interactive design.

4. **Evaluate methods used to create apps for Google Fit platform and API.**
    - 4.1 Discuss the Google Fit platform, core concepts, types and storage.
    - 4.2 Analyze the use of sensors and developer responsibilities.
    - 4.3 Create a Hello Fit App.
    - 4.4 Analyze the use of the Google Fit API and main package.

5. **Analyze wearable requirements of different users and agencies.**
    - 5.1 Discuss the importance of real world applications.
    - 5.2 Analyze the need for home automation, wearables in the workplace, and wearables for fitness, health and medical.
    - 5.3 Analyze the uses of wearables for industrial manufacturing, civic and government users.

Learning Resources

Required:
Mishra, S., (2015) *Wearable Android App Development: Android Wear & Google FIT.*
ISBN: 978-1-119-05110-7

Supplemental:
Personal Computer.

Student Evaluation

Tests- 40% (Two Equally Weighted)
Assignments- 30% (Two Equally Weighted)
In-Class Activities- 30% (Five Equally Weighted)

Grade Scheme

The round off mathematical principle will be used. Percentages are converted to letter grades and grade points as follows:

Mark (%)	Grade	Grade Point	Mark (%)	Grade	Grade Point
94-100	A+	4.0	67-69	C+	2.3

87-93	A	3.7	63-66	C	2.0
80-86	A-	3.5	60-62	C-	1.7
77-79	B+	3.2	50-59	D	1.0
73-76	B	3.0	0-49	F	0.0
70-72	B-	2.7			

Prior Learning Assessment and Recognition

Students who wish to apply for prior learning assessment and recognition (PLAR) need to demonstrate competency at a post-secondary level in all of the course learning requirements outlined above. Evidence of learning achievement for PLAR candidates includes:

- Not Applicable: Post Graduate course.

Course Related Information

Instructors will evaluate the students with tests, activities and assignments, or any combination of these elements. Tests may be of any form including: fill in the blank, essay style, or multiple choice. Activities and assignments can be homework or in class exercises to be completed individually or in a team setting as per the instructors requirements. All course work is to be completed according to the syllabus. Students should take careful notes as not all the material can be found in the textbook or handout material. Attendance is necessary to be successful.

College Related Information

Academic Integrity

Lambton College is committed to high ethical standards in all academic activities within the College, including research, reporting and learning assessment (e.g. tests, lab reports, essays).
The cornerstone of academic integrity and professional reputation is principled conduct. All scholastic and academic activity must be free of all forms of academic dishonesty, including copying, plagiarism and cheating.

Lambton College will not tolerate any academic dishonesty, a position reflected in Lambton College policy. Students should be familiar with the Students Rights and Responsibilities Policy, located on the MyLambton website. The policy states details concerning academic dishonesty and the penalties for dishonesty and unethical conduct.

Questions regarding this policy, or requests for additional clarification, should be directed to the Lambton College Centre for Academic Integrity

Students with Disabilities

If you are a student with a disability please identify your needs to the professor and/or the Accessibility Centre so that support services can be arranged for you. You can do this by making an appointment at the Accessibility Centre or by arranging a personal interview with the professor to discuss your needs.

Student Rights and Responsibility Policy

Acceptable behaviour in class is established by the instructor and is expected of all students. Any form of misbehaviour, harassment or violence will not be tolerated. Action will be taken as outlined in Lambton College policy.

Date of Withdrawal without Academic Penalty

Please consult the Academic Regulations and Registrar's published dates.

Waiver of Responsibility

Every attempt has been made to ensure the accuracy of this information as of the date of publication. The content may be modified, without notice, as deemed appropriate by the College.

Students should note policies may differ depending on the location of course offering. Please refer to campus location specific policies:

- Lambton College - Sarnia Campus: https://www.mylambton.ca/Policies/
- Lambton College - Non-Sarnia Study Locations: https://www.mylambton.ca/Lambton_in_GTA/Student_Policies/

Note: It is the student's responsibility to retain course outlines for possible future use to support applications for transfer of credit to other educational institutions.