



THOMPSON RIVERS UNIVERSITY

Located on the Tk'emlups te Secwepemc territory within the unceded traditional lands of Secwepmecul'ecw
(Secwepemc Nation)

Course Outline

Computing Science Department
Faculty of Science

COMP 3160
Mobile App Development II (3,1,0)
Winter 2018

Instructor: Musfiq Rahman **Phone/Voice Mail:** (250) 371-5957
Office: HOL 416 **E-Mail:** mrahman@tru.ca
Office Hours: "Open door - walk in" policy or by appointment.

Moodle Course Instance Name: COMP_3160_01_Musfiq
Moodle Enrollment Key: 3160_01

1. CALENDAR DESCRIPTION

Students are introduced to advanced mobile application development. Topics include databases, GPS and other sensors, maps, 2D graphics, 3D graphics, sound, music and other media, game development, and network communication.

2. PREREQUISITES

A mark of C or better in Mobile Application Development I (or instructor's permission).

3. EDUCATIONAL OBJECTIVES/OUTCOMES Students will learn how to:

1. Develop advanced mobile applications, including multi-threaded applications
2. Support different screen sizes and densities.
3. Access databases using Room and SQLite
4. Create content providers for sharing data
5. Use Text-to-Speech Engine and produce speech output
6. Collect speech input and use speech recognition
7. Access the GPS sensor
8. Display maps
9. Perform geocoding
10. Communicate between mobile devices and external servers via the Internet
11. Use NFC technology
12. Learn about the basics of game development
13. Use other sensors typical of a mobile device (e.g. accelerometers)
14. Create 2D and 3D graphics

15. Integrate sound and music in a mobile application
16. Develop applications for a popular mobile platform
17. Get Google Play Developer Console account
18. Distribute mobile apps on Google Play

4. **TEXTS/MATERIALS**

No text book required.

5. **Grading Scheme**

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| Lab Assignments | 10% |
| Project | 30% |
| MidTerm | 25% |
| Final Exam | 35% |

6. **IMPORTANT COURSE RULES:**

- Attendance is mandatory for all lectures, labs and seminars.
- Lab assignments will be peer-reviewed in class and will not be rescheduled without a medical note (dated the day of the activity from Health Services or a family physician).
- Google Play Developer Console account is required for this course.
- Students must publish at least one App on GooglePlay store. Failure to do so will result in a DNC grade for the course. The main objective should be to have at least 50 downloads for the app and earn at least \$0.99 by the last day of classes.

7. **USE OF TECHNOLOGY:**

Moodle LMS will be used to distribute presentation slides and other course activities. BitBucket will be used for issue tracking and peer-review. It is the responsibility of the student to enroll in the course Moodle shell, register with Bitbucket and to consult these websites on a regular basis for new postings.

8. **PRIOR LEARNING ASSESSMENT & RECOGNITION (PLAR):**

As this course covers a variety of advanced topics, PLAR will require significant experience as a mobile application developer.

9. **COURSE TOPICS:**

1. Introduction, Review of Android Platform
2. Supporting different screen sizes and densities
3. Database access with Room and SQLite
4. Content providers
5. Speech input and output
6. Maps, GPS, Geocoding
7. Networking, NFC
8. Game development basics
9. 2D and 3D graphics
10. Sound and music
11. Sensors
12. Distribution of apps on Google Play

Note: The above listing is a broad outline of the topics intended (may vary) to be covered in the course. As the course progresses, each module will be outlined in detail. Topics could be changed as time permission.

| 10. Course Policies, Expectations, and Guidelines | |
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| Guidelines on Religious Observances | <ul style="list-style-type: none"> - Where classes or examinations are scheduled on the holy days of a religion, students may notify their instructors, at least two weeks in advance, of their intention to observe the holy day(s) by absenting themselves from classes or examinations. - Instructors will provide reasonable opportunities for such students to make up work or missed examinations. - Students will cooperate by accepting the provision of reasonable opportunities for making up work or missed examinations. |
| Accessibility | Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach the course instructor and/or TRU Disability Services Department as soon as possible. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course. |
| Course Passing | Students must receive a passing grade on combined practical work and a passing grade on combined exam work in order to pass this course. The instructor reserves the right to solely determine a student's mark on labs/projects/exams. |
| Late Submission of Lab/Assignments/Projects | The assignments and projects are due on a designated due date and must be submitted to the course Moodle LMS and/or according to instructions. Late submission will NOT be accepted and will receive a mark of zero unless a legitimate medical excuse is received. |
| Coursework Mark Appeals | All marks must be appealed within 48 hours of the mark being posted on Moodle. No appeals will be accepted after the deadline. |
| Attendance | Students are expected to attend every class and seminar/lab. Students who miss 5 or more lectures, labs or seminars without cause may, on recommendation of the instructor, be withdrawn from a course. |
| Electronic Devices | No unauthorized audio or video recording of lectures or labs is permitted. No electronic devices (e.g. cell phones, pagers, PDA, etc.) may be used during examinations or tests unless explicitly authorized. |
| Lab/Projects Submission | <ul style="list-style-type: none"> - It is expected that all lab projects will be prepared and submitted to a professional level of quality. - Any work submitted for marking must include assignment identification, student name, and student number. Students must follow the submission instructions posted on Moodle (email submissions will NOT be accepted). - Submitted work may be checked using plagiarism detection software. Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. TRU's academic integrity policies are followed in this course. A student is expected to be familiar with these policies as outlined at https://www.tru.ca/_shared/assets/ed05-05657.pdf. - Any work you submit must be your own. In most cases, it is acceptable to share ideas with your peers but not program source code or other written work. - Plagiarism will not be tolerated and may result in: zero grade, course failure, or expulsion from TRU. |

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| | <ul style="list-style-type: none"> - The instructor reserves the right to solely determine a student's mark on labs/projects/exams. |
| Exams | <ul style="list-style-type: none"> - If you arrive late to your exam (e.g. within 15 minutes) you will be permitted to write the exam but you will not be granted additional time at the end of the exam. If your late arrivals beyond 15 minutes, you will not be permitted to write the exam. - If you are ill on the day of an exam, you must obtain a medical note (dated the day of the exam from Health Services or your family physician). You must also inform your instructor that you will not be writing the exam because of your illness. - Should you become ill during an exam, inform the exam invigilator immediately. If you are unsure about your health before you begin an exam, DO NOT write the exam and report your health conditions to the exam invigilator immediately. - Students are responsible for contacting the course instructor regarding rescheduling missed exams. - A zero mark will be awarded for any missing exam unless supported with a medical note from a doctor. |