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| OP_logo_H_cmyk |  | Bachelor of Information Technology |

Course Directive

IN721 Design and Development of Applications for Mobile Devices

Semester One, 2019

# Description

In this paper, students will explore the design and implementation of applications for mobile devices.

# Course Information

Credits: 15 credits

Prerequisites: IN610 Programming 3

# Lecturers

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| Name | Nathan Rountree |
| Location | D303a |
| Phone | 474-2854 |
| email | Nathan.Rountree@op.ac.nz |
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# Course Dates

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| --- | --- |
| Term 1 (8 weeks) | 18 February – 12 April |
| Mid semester break | 15 April – 26 April |
| Term 2 (8 weeks) | 29 April – 21 June |

# Aims

To explore the design and implementation of applications for mobile devices.

# Learning Outcomes

At the successful completion of this course, students will be able to:

1. Implement complete, non-trivial, industry-standard mobile applications following sound architectural and code-quality standards
2. Explain relevant principles of human perception and cognition and their importance to software design.
3. Identify relevant use cases for a mobile computing scenario and incorporate them into an effective user experience design.
4. Follow industry standard software engineering practice in the design of mobile applications.

# Indicative Content

* Interaction and interface design for mobile
* Use case analysis for native vs. web-based development
* User-centred design and testing
* Hardware opportunities and constraints.
* SDKs, APIs, libraries and other tools
* Software architectures for mobile
* Deployment policies and procedures

# Resources

* **Software**

Android Studio, latest version with most recent SDK (from developer.android.com/studio/index.html)

* **Textbook**

Required readings will be provided digitally or be available from the OP Safari Custom Collection (proquestcombo.safaribooksonline.com from OP machines or via ViewClient from off-campus). All readings are examinable.

# provisional Schedule

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| --- | --- | --- |
| Week | Session 1 | Session 2 |
| 1 | Introduction to  Android Studio | Project resources  First Code – accessing controls  Take home practical – array resources |
| 2 | Event handlers | Screen Controls |
| 3 | Activities and Intents | Universal Principles |
| 4 | Navigation | Data Passing |
| 5 | Language Trainer Practical 1 | Language Trainer Practical 2 |
| 6 | Fragments | Dialog Fragments |
| 7 | Alert Builder Practical | Custom Adapters |
| 8 | External Data 1 | External Data 2 |
| 9 | Web services | Location services |
| 10 | Sensors | Camera |
| 11 | 3rd Party Libraries | QR Codes |
| 12 | Project work | Project work |
| 13 | User testing | User testing |
| 14 | Project work | Project work |
| 15 | Project showcase (code defence) | Project showcase (code defence) |
| 16 | Exam prep | Exam |

# AssessmenT

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| --- | --- | --- |
| Assessment | Weight | Due |
| In-class practicals | **20%** | **Throughout semester** |
| Project | **50%** | **Code freeze 14 June 5pm** |
| Exam | **30%** | **June 20, normal class time** |

* Detailed assignment requirements, including instructions for submission, will be provided for each assessment.

# Course Requirements and Expectations

# Criteria for Passing

# To pass this paper, you must achieve an overall average of 50. There must be a genuine attempt at all assessments. There are no resits.

# Attendance

* Students are expected to attend all classes, both lectures and labs.
* If you miss a class you will need to get notes from another student.
* If you cannot attend for a few days for any reason, please contact your lecturer.
* You must turn up ready for assessments on the due date and at the correct time. No extra time will be scheduled. If you do not turn up, you have failed the assessment.

## Communication

Your student email is an official communication channel. It is your responsibility to regularly check your student email and Moodle for important course related material, including changes to class scheduling or assessment details. Not checking will not be accepted as an excuse.

You can manage your email at the Student Hub and download the instructions for forwarding your email at http://www.op.ac.nz/students/student-hub/

## Snow Days/Polytechnic Closure

In the event that the Polytechnic is closed or has a delayed opening because of snow or bad weather, you should not attempt to attend class if it is unsafe to do so. It is possible that your instructor will not be able to attend either, so classes will not physically be meeting. However, this does not become a holiday. Rather, material will be available on either Moodle of the I drive covering the material for classes affected by the closure. You are responsible for any material presented in this manner. Information about closure will be posted on the BIT and Otago Polytechnic Facebook pages <https://www.facebook.com/OtagoPoly>.

## Group work and originality

Students in the Bachelor of Information Technology degree are expected to hand in original work. Students are encouraged to discuss assignments with their fellow students, however, all assignments are to be completed as individual works unless group-work is ***explicitly*** required (i.e. if it doesn’t say it is group-work then it is not group-work – even if a group consultation was involved). Failure to submit your own original work will be treated as plagiarism.

## Referencing

Appropriate referencing is required for all work. Referencing standards will be specified by your lecturer.

## Plagiarism

Plagiarism is submitting someone else’s work as your own. Plagiarism offences are taken seriously and an assessment that has been plagiarised may be awarded a zero mark. A definition of plagiarism is in the Student Handbook, available online or at the School office.

## Submission requirements

All assignments are to be submitted by the time, date, and method given when the assignment is issued. Failure to meet all requirements may result in a penalty of up to 10% per day (including weekends).

## Extensions

Extensions are only available for unusual circumstances. These must be applied for, and approved, prior to the submission deadline.

## Impairment

In case of sickness contact your lecturer or year co-ordinator as soon as possible, preferably before the test or assignment is due. The policy regarding the granting of a mark that considers impaired performance requires a medical certificate and a medical practitioner’s signature on a form. You may should refer to the guide on impaired performance on the student handbook.

## Appeals

If you are concerned about any aspect of your assessment, please approach the lecturer in the first instance. We support an open door policy and aim to resolve issues promptly. Further support is available from Year Co-ordinators, Programme Manager and Head of School. Otago Polytechnic has a formal process for academic appeals if necessary.

# Other Documents

Regulatory documents relating this course can be found on the Polytechnic website.