Course Directive
IN608: Intermediate Application Development Concepts
Semester Two, 2021

Description

In this paper we will explore some more advanced programming concepts, such as data structures, concurrency and design patterns. We will also learn some important practical programming methods, including testing and networked application programming

Course Information

- 15 Credits
- Class sessions: Mondays, 8:00 AM & Thursdays, 3:00 PM
- D202

Lecturer

Tom Clark
Email: tclark@op.ac.nz

Course Dates

Term 1 (11 weeks)	19 July - 1 October
Term 2 (5 weeks)	18 October - 19 November

Learning Outcomes

On successful completion of this paper you will be able to:

1. Demonstrate sound programming by following design patterns and best practices;
2. Design and implement full-stack applications using industry relevant programming languages.

Resources

- Course notes, lecture slides, and lab documents are availble in a GitHub repository published at `https://github.com/tclark/op-intermediate-app-dev`.
- You will need a GitHub account to submit your assessments. Assessments are available at the GitHub Classroom repositories below.

  1. : Practicals: `https://classroom.github.com/a/xywJcbdG`
  2. : Assignment One: `https://classroom.github.com/a/s0tUsFCT`
  3. : Assignment Two: `https://classroom.github.com/a/5E-eQxnX`

  The submission process will be covered in class.
- Programming for this paper will be done in the Python programming language. Setup of your Python environment will be discussed in class.
- We will not cover the basics of Python in the paper. If you would like a primer on the language, see `https://github.com/dabeaz-course/practical-python`.
- There is no text, but assigned readings may be specified by the lecturer.

Course Content and Schedule

This schedule is subject to change.

Week	Week Start	Session 1 - Monday	Session 2 - Thursday
1	19 Jul	Introduction	OOP Review
2	26 Jul	Data Types	Abstract Data Types
3	2 Aug	Operator Overloading	Functional Programming
4	9 Aug	Exceptions	Modules, Imports
5	16 Aug	SOLID	SOLID
6	23 Aug	Patterns, Singletons	Decorators
7	30 Aug	Iterators	Sequences
8	6 Sep	Observer	Factory
9	13 Sep	Work Time	Work Time
10	20 Sep	Serialisation	Testing
11	27 Sep	Testing	Packaging
H1	4 Oct	Holiday	Holiday
H2	11 Oct	Holiday	Holiday
12	18 Oct	Network Sockets	Network Sockets
13	25 Oct	Labour Day	Databases, ORM
14	1 Nov	Threading, Forking	Async IO
15	8 Nov	Project Work	Project Work
16	15 Nov	Project Work	Project Work

Assessment

There are three assessments in this paper, weighted as follows:

Assessment	Due Date	Weighting
Practicals	19 Nov	20%
Project 1: Problem Set	1 Oct	30%
Project 2: Messaging Server	18 Nov	50%.

Learning Hours

This course requires 150 hours of learning. This time includes 64 hours of timetabled class time, and 86 hours of self-directed reading, preparation and completion of assessment work.

Criteria for Passing

You must earn an overall average mark of 50% or better to pass this paper. There must be a genuine attempt at all assessments. There are no resits.

Course Requirements and Expectations

Attendance

- Students are expected to attend all classes, both lectures and labs.
- If you miss a class you should get notes from another student.
- If you cannot attend for two or more consecutive sessions, contact the lecturer.

Proprietary software

This class can be completed using only free/open source software (FOSS). Proprietary software is present on lab computers.

Communication

Important announcements and discussions about the course, assessments, and scheduling may take place during class sessions. It is your responsibility to be informed about them. If you cannot attend a class session, be sure to check with another student.

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

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 may not physically meet. However, this does not become a holiday. Rather, material will be available on GutHub covering the classes affected by the closure. You are responsible for any material presented in this manner. Information about closure will be posted on the Otago Polytechnic Facebook page `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 involved. Failure to submit your own unique work will be treated as plagiarism.

Referencing

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

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

If circumstances are likely to prevent you finishing an assessment on time, contact the lecturer as soon as possible, but definitely before the due date. 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 practitioners 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 the 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.

Special Resources and Requirements

If you have any special needs, whether they relate to the course material, the exercises, the assessment, or anything in the course - then please let your instructor know as soon as possible.