Course Directive
IN710: Object-Oriented Systems Development
Semester One, 2020

Description

In this paper, students will develop language-independent skills in Object-Oriented development for medium to large applications. Students will learn current best practices and tools for the design and implementation of enterprise systems through a combination of discussion of theoretical principles and extensive coding work.

Course Information

Credits:	15 Credits
Prerequisite:	IN610: Programming 3 or IN628: Programming 4
Timetable:	N/A

Lecturers

Name:	Grayson Orr (Lecturer)	Hymie Abd-Latif (Senior Lecturer)
Location:	D311	D316a
Email:	grayson.orr@op.ac.nz	suhaimi.latif@op.ac.nz

Course Dates

Term 1:	N/A
Mid Semester Break:	N/A
Term 2:	N/A

Aims

To provide students with experience in the design and development of Object-Oriented software systems using an industry-relevant IDE (currently Python under Visual Studio Code). The course caters to experienced programming students who are working at an advanced level.

Learning Outcomes

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

1. Discuss theoretical and pragmatic issues surrounding design and implementation of enterprise software systems.
2. Analyse a problem statement for a complex software system and design an appropriate class architecture for the problem solution.
3. Design and implement components of large software systems following industry standard software engineering methodologies and producing industry-quality code.

Resources

Software

This paper will be taught using **Microsoft Visual Studio Code**. An installer for **Microsoft Visual Studio Code** is available. See https://code.visualstudio.com/. Please refer any problems with downloads or installers to **Rob Broadley** in **D205a**.

Readings

There is no textbook for the course.

Provisional Schedule

Week	Date	Session 1	Session 2
1	XX-XX-2020	Python 1	Python 2
2	XX-XX-2020	Object-Oriented Analysis & Design	Exceptions & Unit Testing
3	XX-XX-2020	Strategy Pattern	Observer Pattern
4	XX-XX-2020	Factory & Abstract Factory Pattern	Singleton Pattern
5	XX-XX-2020	Adapter Pattern	Builder Pattern
6	XX-XX-2020	State Pattern	Command Pattern
7	XX-XX-2020	Template Pattern	Decorator Pattern
8	XX-XX-2020	Prototype Pattern	Delegation Pattern
9	XX-XX-2020	Concurrency & Parallelism	Serialization
10	XX-XX-2020	Anti-Patterns & Code Smells	Design Patterns Assessment Work
Mid Term Break			
11	XX-XX-2020	Django 1: Model Layer	Django 2: View Layer
12	XX-XX-2020	Django 3: Template Layer	Django 4: Forms
13	XX-XX-2020	Django 5: Development Process 1	Django 6: Development Process 2
14	XX-XX-2020	MVT Assessment Work	MVT Assessment Work
15	XX-XX-2020	MVT Assessment Work	MVT Assessment Work
16	XX-XX-2020	Theory Exam Preparation	Theory Exam

Assessments

Assessment	Weight	Due Date	Learning Outcomes
Theory Exam	30%	XX-XX-2020	1, 2
Practicals	20%	XX-XX-2020	2, 3
Design Patterns	20%	XX-XX-2020	2, 3
MVT	30%	XX-XX-2020	2, 3

Course Requirements and Expectations

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

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

Microsoft Outlook and Teams are the official communication channels. It is your responsibility to regularly check Microsoft Outlook/Teams and GitHub for important course related material, including changes to class scheduling or assessment details. Not checking will not be accepted as an excuse.

Snow Days/Polytechnic Closure

In the event 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 made available on GitHub for 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 assessments with their fellow students, however, all assessments 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 assessments are to be submitted by the time, date, and method given when the assessment 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 BIT Team Leader (Michael Holtz) as soon as possible, preferably before the assessment or exam 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 the BIT Team Leader (Michael Holtz) and Head of College (Richard Nyhof). Otago Polytechnic has a formal process for academic appeals if necessary.

Other Documents

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