



Course Directive

Intermediate Application Development Concepts/Tāura o Te Taupānga Tukutuku

Semester One, 2023

Course Information

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| Level: | 6 |
| Credits: | 15 |
| Prerequisite: | ID607001: Introductory Application Development Concepts |
| Timetable: | Rōpū Kōwhai: Monday 08.00 AM D201 and Thursday 08.00 AM D207 |
| Lecturer-Led Tutorials: | Thursday 8.30 PM - 10.00 PM |

Teaching Staff

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|------------------|---|
| Name: | Grayson Orr |
| Position: | Senior Lecturer and Second/Third-Year Coordinator |
| Office Location: | D318 |
| Email Address | grayson.orr@op.ac.nz |

Course Dates

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|---------------------|---|
| Term 1: | Monday 17 July - Friday 22 September |
| Mid Semester Break: | Monday 25 September - Friday 06 October |
| Term 2: | Monday 09 October - Friday 17 November |

Public Holidays and Anniversary Days

A list of public holidays and anniversary days can be found here - <https://www.op.ac.nz/students/importantdates>

Aims

To extend the concepts of application development including algorithms, data structures and design patterns that are required to use a complex, industry-relevant frameworks or libraries.

Learning Outcome

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

1. Apply design patterns and programming principles using software development best practices.
2. Design and implement full-stack applications using industry relevant programming languages.

Assessments

| Assessment | Weighting | Due Date | Learning Outcomes |
|---|-----------|------------------------------|-------------------|
| Practical: Skills-Based | 20% | 31-03-2023 (Fri at 10.00 AM) | 1 |
| Project 1: Next.js Hacker News App | 30% | 27-04-2023 (Thur at 4.59 PM) | 1 and 2 |
| Project 2: Node.js and Express Pub Quiz App | 50% | 15-06-2023 (Thur at 4.59 PM) | 1 and 2 |

Provisional Schedule

| Week | Date Starting | Topics |
|------------------|---------------|--|
| 1/Tahi | 20-02-2023 | GitHub Workflow and React |
| 2/Rua | 27-02-2023 | Next.js and Development Workflow |
| 3/Toru | 06-03-2023 | Styling - CSS Modules and Tailwind CSS |
| 4/Whā | 13-03-2023 | State Management |
| 5/Rima | 20-03-2023 | Component Testing and Storybook |
| 6/Ono | 27-03-2023 | Practical Work |
| 7/Whitu | 03-04-2023 | Project 1 Work |
| 8/Waru | 24-04-2023 | Project 1 Work |
| 9/Iwa | 01-05-2023 | Express, HTTPS, OWASP Risks, CORS, CSP and Server Security |
| 10/Tekau | 08-05-2023 | Authentication and JSON Web Token (JWT) |
| Mid Term Break | | |
| 11/Tekau mā tahi | 15-05-2023 | Authorisation and Access Control |
| 12/Tekau mā rua | 22-05-2023 | Automation Testing and Code Coverage |
| 13/Tekau mā toru | 29-05-2023 | Caching and Compression |
| 14/Tekau mā whā | 05-06-2023 | Project 2 Work |
| 15/Tekau mā rima | 12-06-2023 | Project 2 Work |
| 16/Tekau mā ono | 19-06-2023 | Catch Up Week |

Provisional Schedule

| Week | Date Starting | Topics |
|------------------|---------------|---|
| 1/Tahi | 17-07-2023 | Development Workflow and JavaScript |
| 2/Rua | 24-07-2023 | Express, Postman and Deployment |
| 3/Toru | 31-07-2023 | PostgreSQL, ORM and Relationships |
| 4/Whā | 07-08-2023 | Validation |
| 5/Rima | 14-08-2023 | Seeding and Automation Testing |
| 6/Ono | 21-08-2023 | JSDoc and Postman Documentation |
| 7/Whitu | 28-08-2023 | Practical and Project Work |
| 8/Waru | 04-09-2023 | Practical and Project Work |
| 9/Iwa | 11-09-2023 | React 1: Installation and Developer Tools |
| 10/Tekau | 18-09-2023 | React 2: Describing the UI |
| Mid Term Break | | |
| 11/Tekau mā tahi | 09-10-2023 | React 3: Adding Interactivity |
| 12/Tekau mā rua | 16-10-2023 | React 4: Managing State |
| 13/Tekau mā toru | 23-10-2023 | React 5: HTTP Requests |
| 14/Tekau mā whā | 30-10-2023 | Project 2 Work |
| 15/Tekau mā rima | 06-11-2023 | Project 2 Work |
| 16/Tekau mā ono | 13-11-2023 | Catch Up Week |

Resources

Software

This paper will be taught using **Microsoft Visual Studio Code** and **Node.js**. An installer for **Microsoft Visual Studio Code** and **Node.js** are available - <https://code.visualstudio.com/download> and <https://nodejs.org/en/download>. Please refer any problems with downloads or installers to **Rob Broadley** in D205a.

Readings

No textbook is required for this course. URLs to useful resources will be provided in the lecture notes.

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 assessments.

Criteria for Passing

To pass this paper, you must achieve a cumulative pass mark of **50%** over all assessments. There are no reassessments or resits.

Attendance

- Learners are expected to attend all classes, including lectures and labs.

- If you cannot attend for a few days for any reason, contact the course.

Communication

Microsoft Outlook/Teams are the official communication channels for this course. It is your responsibility to regularly check **Microsoft Outlook/Teams** and [GitHub](#) for important course 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 **Otago Polytechnic — Te Pūkenga** 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 the teaching staff will not be able to attend either, so classes will not physically be meeting. However, this does not become a holiday. Rather, the course material will be made available on [GitHub](#) for classes affected by the closure. You are responsible for any course material presented in this manner. Information about closure will be posted on the **Otago Polytechnic | Te Pūkenga Facebook** page <https://www.facebook.com/OtagoPoly>.

Group Work and Originality

Learners in the **Bachelor of Information Technology** programme are expected to hand in original work. Learners are encouraged to discuss assessments with their fellow learners, 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 original work will be treated as plagiarism.

ChatGPT

In this course, you will be encouraged to use **ChatGPT** for your assessments. Learning to use Artificial Intelligence tools is an important skill. While **ChatGPT** is a powerful tool, you must be aware of the following:

- If you provide **ChatGPT** with a prompt that is not refined enough, it may generate a not-so-useful response
- Do not trust **ChatGPT's** responses blindly. You must still use your judgement and may need to do additional research to determine if the response is correct
- Acknowledge that you are using **ChatGPT**. In the assessment's repository **README.md** file, please include what prompt(s) you provided to **ChatGPT** and how you used the response(s) to help you with your work

Referencing

Appropriate referencing is required for all work. Referencing standards will be specified by the teaching staff.

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 will result in a penalty of up to **10%** per day (including weekends).

Extensions

Familiarise yourself with the assessment due dates. Extensions will **only** be granted if you are unable to complete the assessment by the due date because of **unforeseen circumstances outside your control**. The length of the extension granted will depend on the circumstances and must be negotiated with the course lecturer before the assessment due date. A medical certificate or support letter may be needed. Extensions will not be granted for poor time management or pressure of other assessments.

Impairment

In case of sickness contact the teaching staff or **Head of Information Technology (Michael Holtz)** as soon as possible, preferably before the assessment 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 refer to the guide on impaired performance on the student handbook.

Appeals

If you are concerned about any aspect of your assessment, approach the teaching staff in the first instance. We support an open-door policy and aim to resolve issues promptly. Further support is available from the **Head of Information Technology (Michael Holtz)** and **Second/Third-Year Coordinator (Grayson Orr)**. **Otago Polytechnic — Te Pūkenga** has a formal process for academic appeals if necessary.

Other Documents

Regulatory documents relating to this course can be found on the **Otago Polytechnic — Te Pūkenga** website.