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# COMP 3036 FULL STACK DEVELOPMENT

#### Credit Points 10

**Description** Full Stack Development delivers in-depth knowledge of systems development. Students learn how to develop, test and integrate client (front-end) and server (back-end) parts of the software system. The subject will explore various options for the clientserver data communication, using either REST APIs, sockets for live subscriptions or graph-based solutions. The subject focuses also on various testing approaches (i.e. unit, integration and end to end), continuous delivery, containerisation with Docker, integration and deployment procedures. Students use versioning control and engage with the Github platform for project management and quality control; developing authentic, real-world projects. Based on the performance in the subject, a selected number of students will have the opportunity to undergo a week-long placement with a target business partner. Students doing the placement will work on industry projects assessed by professional staff at their placement venue.

School Computer, Data & Math Sciences

Student Contribution Band HECS Band 2 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/ currentstudents/current\_students/fees/) page.

Level Undergraduate Level 3 subject

Pre-requisite(s) COMP 3028

### **Learning Outcomes**

After successful completion of this Unit, students will be able to:

- 1. Apply programming skills using Javascript, Typescript, HTML, CSS, JSX, SQL and NoSQL.
- 2. Develop applications in popular front-end frameworks such as React.
- 3. Design processes for implementation, maintenance and continuous integrations of full stack software systems.
- Apply appropriate strategies, technologies and architectures during development of full stack systems.
- 5. Communicate designs and strategies to a diverse audience following professional practice standards.

## Subject Content

· Front and back-end development

- o Javascript
- o Typescript
- o Python
- o CSS
- o HTML
- o JSX

Full-stack frameworks

- o Node.js (React, Vue, Svelte)
- o Python (Django)
- o Ruby (Rails)

Containerisation

•Database Management o SQL o No-SQL

- API Development
- o GraphQL
- o REST API
- o Subscriptions
- o Socket Programming

Version Control

- o Git
- o Github

Quality Assurance

- o Continuous Integration (CI)
- o Continuous Development (CD)
- o Unit Testing
- o Integration Testing
- o End to End Testing
- Deployment
- o Open-Source Development o Packaging

Licensing

Project Management

#### Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Туре	Length	Percent	Threshold	Individual/ Group Task
Practical	Written submissions & workshop demonstration delivered progressively through the semester.	30 ns	Ν	Individual
Applied Project	Part A: Implementation of full-stack system Part B: 15 minutes	50	Y	Individual
End-of- session Exam	1 hour	20	Ν	Individual

#### **Students doing the Placement**

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Туре	Length	Percent	Threshold	Individual/ Group Task
Practical	Written submissions & workshop demonstratio delivered progressively through the semester	30 ns	Ν	Individual
Applied Project	Part A: Implementati of full-stack system Part B: 15 minutes Part C: 1500 Words	50 c	Ν	Individual
End-of- session Exam	1 hour	20	Ν	Individual