



This learning and assessment plan outlines how this unit or cluster of units will be delivered and assessed. The schedule of learning topics, assessments and the due date for assessments is included.

<b>Qualification national code and title:</b>	<b>ICT50220 Diploma of Information Technology (Front-End Web Development)</b>
<b>Delivery Period:</b>	<b>Semester 2 2024</b>
<b>Cluster Name</b>	<b>Web Application Development</b>

<b>National ID</b>	<b>Name of unit</b>
ICTWEB517	Create web-based programs
ICTPRG546	Validate application designs against specifications
<b>You can access the full unit/s of competency here</b> (insert web address to unit of competency at <a href="http://www.training.gov.au">www.training.gov.au</a> or equivalent link if available)	
<b>Delivery Location/s (Campus/Room/Online):</b>	Online - <a href="https://blackboard.northmetrotafe.wa.edu.au/">https://blackboard.northmetrotafe.wa.edu.au/</a>

## Student Learning Resources, text, equipment (Required/Optional)

Student to supply:

### 1. Hardware and Software

A USB hard drive is required for the installation of Web Servers. A suggested hard drive specification is (minimum of 500Gb, USB3) in either SSD Drive or Standard Disk Drive. Software such as Virtual environments for development may be used during this course.

XAMPP – Web Server - <https://www.apachefriends.org/index.html>

Laragon – Web Server - <https://laragon.org/>

The following come with Laragon but may need to be installed on your personal computer:

1. Node JS - [Node.js — Download Node.js® \(nodejs.org\)](https://nodejs.org/)
2. NPM Package Manager - [npm | Home \(npmjs.com\)](https://www.npmjs.com/) – comes with the install of Node

Postman - [Postman API Platform](https://www.postman.com/)

React Library <https://react.dev/>

Next.js is Framework <https://nextjs.org/>

### 2. Text Editors/IDE's: Optional

Notepad++ (Free) - editor

Visual Studio Code (Free) – IDE (Recommended)

Favourite editor of IDE

### 3. Browsers



Chrome with web development tools, Firefox browser for testing, Microsoft Edge, Opera, Safari, Google Chrome for Mac, or PC.

#### 4. Pens, paper

Used for Design and problem solving as well as UI/UX development

#### 5. Suggested References:

Ref A: Next.js Tutorials Online – JavaScript to React: <https://nextjs.org/learn/foundations/about-nextjs>

Ref B: React Tutorials Online – Quick Start: <https://react.dev/learn>

College to supply:  
Blackboard Shell <https://blackboard.northmetrotafe.wa.edu.au/>

Lecturer Name:	Phone:	Email:	Contact times	Campus / Room
John Robertson	9427 1014	<a href="mailto:john.robertson@nmtafe.wa.edu.au">john.robertson@nmtafe.wa.edu.au</a>	Appointment available on request	B223

## Assessment Summary

Assessment	Title and brief description	Due Date
Assessment 1	Discussion Questions – Answer Five questions in relation to HTTP	Session 7
Assessment 2	Project - Build web page using components	Session 13
Assessment 3	Project - Build a web application using a framework	Session 17

**You will receive more detailed instructions on each assessment from your lecturer.**

The regular learning requirements to develop the skills and knowledge for this unit are outlined below. Please refer to your timetable for session times.

Please note: This plan is to be used as a guide and may be adapted to meet the needs of students. You will be notified of changes as they occur.

Your training will include **structured in and out of class activities\*** to be completed for this unit.

\*Out of class activities may include(

<input checked="" type="checkbox"/> lectures or tutorials, online tasks, and forums	<input type="checkbox"/> workshop activities
<input checked="" type="checkbox"/> assessments (when integrated with learning)	<input checked="" type="checkbox"/> projects, assignments
<input type="checkbox"/> workplace experience	<input type="checkbox"/> prescribed follow-up activities
<input checked="" type="checkbox"/> prescribed reading and research	<input type="checkbox"/> other (please specify)

Sessions	Element	Topic	Learning	Structured out of
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(Hours)		number		Resources*	class activities*	
Session	Hrs				Activity	Hrs
1	2.5	ICTPRG430 E1-2	<b>Session 1: JavaScript ES6</b> In this Session we will cover the following topics: <ul style="list-style-type: none"> <li>Getting our class code content</li> <li>Setting up our class development environment in VS Code &amp; Laragon</li> </ul> JavaScript ES6 <ul style="list-style-type: none"> <li>Classes</li> <li>Arrow Functions</li> <li>Variables</li> <li>Array Methods</li> <li>Scopes</li> </ul>	Session 01 PowerPoint  Session 01 Challenge Code.zip  Websites React ES6 – w3Schools	Chrome Dev Tools Activity  GitHub in VS Code activity  Introduction to the DOM  Complete Challenge Code	2
3	2.5	ICTPRG430 E1-2 DBS504 E1	<b>Session 2: JavaScript ES6</b> In this Session we will cover the following topics: <ul style="list-style-type: none"> <li>Arrays</li> <li>2D Data Structures</li> <li>De-structuring</li> <li>Ternary Operator</li> <li>Spread Operator</li> <li>Introduction to Objects</li> </ul>	Session 02 PowerPoint  Session 02 Challenge Code.zip  Websites React ES6 – w3Schools	Complete Challenge Code	2
4	2.5	ICTPRG430 E1-2	<b>Session 3: JavaScript ES6</b> In this Session we will cover the following topics: <ul style="list-style-type: none"> <li>Objects</li> <li>Classes</li> <li>Browser Storage</li> <li>Introduction to GitHub</li> </ul>	Session 03 PowerPoint  Session 03 Challenge Code.zip  Websites React ES6 – w3Schools	Introduction to GitHub Activity  W3C ES6 Revision  Complete Challenge Code	4
4	2.5	ICTPRG430 E1-2	<b>Session 4: JavaScript ES6 &amp; OOP</b> In this Session we will cover the following topics: <ul style="list-style-type: none"> <li>Object Orientated programming</li> <li>Modules</li> <li>Introduction to GitHub</li> </ul> <b>Modularisation – Formative Assessment begins</b>	Visualising OOP PowerPoint  Session 04 PowerPoint  Session 04 Challenge	Introduction to GitHub Activity  W3C ES6 Revision  Complete Challenge Code	4



				Code.zip	Modularisation Assessment	
5	2.5	ICTPR G430 E1 ICTWEB5 03 E1 Required skills & knowledge	<b>Session 5: Development Servers &amp; HTTP</b> In this Session we will cover the following topics: <ul style="list-style-type: none"> <li>• HTTP in web development</li> <li>• How the Internet Works in 5 Minutes</li> <li>• HTTP Requests &amp; Responses</li> <li>• HTTP Authentication</li> <li>• Testing Requests &amp; Responses</li> </ul>	Traversy - HTTP Crash Course  HTTP: The Protocol Every Web Developer Must Know - Part 1  HTTP: The Protocol Every Web Developer Must Know - Part 2  Prebuilt Test API  Postman Application	Work on Assignment 1 - Discussion Questions  HTTP Crash Course – Traversy Media  Progressive Web Apps – Chrome Dev Summit  HTTP Succinctly  Current Status of HTTP from W3C  A beginner's Guide to HTTP and REST	2
6	2.5	ICTPRG4 30 E1-4	<b>Session 6: State, UI &amp; the User Interface</b> In this Session we will cover the following topics: <ul style="list-style-type: none"> <li>• State in Vanilla JavaScript</li> <li>• From JavaScript to React</li> <li>• Updating &amp; Rendering the UI with JavaScript</li> <li>•</li> </ul> <b>Activities:</b> <ul style="list-style-type: none"> <li>• Updating the UI with JavaScript</li> <li>• Rendering the UI with JavaScript</li> </ul> <b>Modularisation – Formative Assessment due</b>	Session 06 PowerPoint  Session 06 Challenge Code.zip	Work on Assessment 2  Review Websites from  Class Activity – Thinking about State  Next JS – Tutorial 1 UI  Next JS – Tutorial 2 Updating the DOM	2



7	2.5	ICTPRG4 30 E1-4 ICTDBS50 4 E1-3 RS RK	<b>Session 7: React – Getting Started</b> In this Session we will cover the following topics: <ul style="list-style-type: none"> <li>Getting Started with React</li> <li>What is JSX?</li> <li>Adding Babel</li> </ul> <b>Assessment 1 Due</b>	Session 07 PowerPoint  Session 07 Challenge Code.zip	Next JS – Tutorial 3 JSX  Setting up React Developer Tools activity	3
8	2.5	ICTPRG43 0 E1-4 ICTDBS50 4 E1-3	<b>Session 8: React &amp; Core Components</b> In this Session we will cover the following topics: <ul style="list-style-type: none"> <li>React Core Concepts               <ul style="list-style-type: none"> <li>Components</li> <li>Props</li> <li>State</li> </ul> </li> </ul>	Session 08 PowerPoint  Session 08 Challenge Code.zip	Next JS Tutorial – Essential JavaScript  Review Tutorial for Session 8.	3
<b>Mid Semester Break – Only One Week</b>						
9	2.5	ICTPRG4 30 E1-4 ICTDBS50 4 E1-3 ICTWEB5 03 E2-3	<b>Session 9: Building UI with Components</b> In this Session we will cover the following topics: <ul style="list-style-type: none"> <li>Building UI with Components               <ul style="list-style-type: none"> <li>Creating Components</li> </ul> </li> <li>Displaying Data with Props               <ul style="list-style-type: none"> <li>Using Props</li> <li>Using Variables in JSX</li> <li>Iterating through lists</li> </ul> </li> </ul>	Session 09 PowerPoint  Session 09 Challenge Code.zip	Work on Assessment 2  Next JS Tutorial 1– Building UI with Components  Next JS Tutorial 2 – Displaying Data with Props	3
10	2.5	ICTPRG4 30 E1-4 ICTDBS50 4 E1-3 ICTWEB5 03 E2-3	<b>Session 10: Adding Interactivity with State</b> In this Session we will cover the following topics: <ul style="list-style-type: none"> <li>the React object</li> <li>Debugging state</li> <li>Adding Interactivity with State               <ul style="list-style-type: none"> <li>Listening to Events</li> <li>Handling Events</li> <li>Responding to events</li> <li>State: a components memory</li> </ul> </li> </ul>	Session 10 PowerPoint  Session 10 Challenge Code.zip	Work on Assessment 2  Next JS Tutorial – Adding Interactivity with State  Viewing State in the browser	3
<b>End of Term 1</b>						



11	2.5	ICTPRG4 30 E1-4 ICTDBS50 4 E1-3 ICTWEB5 03 E2-3	<b>Session 11: Managing State</b> In this Session we will cover the following topics: <ul style="list-style-type: none"> <li>• Reacting to input with state</li> <li>• Choosing the state structure</li> <li>• Sharing state between components</li> </ul>	Session 11 PowerPoint  Session 11 Challenge Code.zip	Work on Assessment 2  Next JS Tutorial – Managing State  Next JS Tutorial – Server & Client Components  Debugging State in the browser	3
12	2.5	ICTPRG4 30 E1-4 ICTDBS50 4 E1-3 ICTWEB5 03 E2-3	<b>Session 12: What is Next JS?</b> In this Session we will cover the following topics: <ul style="list-style-type: none"> <li>• What is Next.js</li> <li>• How Next.js works</li> </ul>	Session 12 PowerPoints  Session 12 Challenge Code.zip	Work on Assessment 2  Next JS Tutorial From React to Next  Next JS Tutorial – Installing Next.js  Review Tutorial for Session 12.	4
13	4.5	ICTPRG4 30 E1-4 ICTDBS50 4 E1-3 ICTWEB5 03 E2-3	<b>Session 13: Next JS, CLI &amp; Package Management</b> In this Session we will cover the following topics: <ul style="list-style-type: none"> <li>• Package Installation</li> <li>• Improving the Dev Environment</li> <li>• Compilers</li> </ul> <p><b>Assessment 2 Due</b></p> <p><b>Begin of React foundations Course</b></p>	Session 13 PowerPoints  Session 13 Challenge Code.zip	Work on Assessment 2  Terminal Commands Activity  Package.json activity	4
14	2.5	ICTPRG4 30 E1-4 ICTDBS50 4 E1-3 ICTWEB5 03 E2-3	<b>Session 14: Create a NextJS App</b> In this Session we will cover the following topics: Create a Next.js App <ul style="list-style-type: none"> <li>• Setup</li> <li>• Welcome to Next.js Home page</li> <li>• Editing Pages</li> </ul>	Session 14 PowerPoints  Session 14 Challenge Code.zip	Work on Assessment 3  Next JS Tutorial Getting Started with Next.js  Next JS Tutorial Creating a Next.js App Next JS Tutorial Creating a	2



			Navigate Between Pages <ul style="list-style-type: none"> <li>• Setup</li> <li>• Pages in Next.js</li> <li>• Link Component</li> <li>• Client-Side Navigation</li> </ul>		Next.js App  Next J S Tutorial Navigate Between Pages	
15	4.5	ICTPRG4 30 E1-4 ICTDBS50 4 E1-3 ICTWEB5 03 E2-3	<b>Session 15: Adding custom fields to a page</b>  Assets, Metadata, and CSS <ul style="list-style-type: none"> <li>• CSS Styling</li> <li>• Global Styles</li> <li>• Styling Tips</li> </ul> Pre-rendering and Data Fetching <ul style="list-style-type: none"> <li>• Two Form of Pre-rendering</li> <li>• Static Generation</li> <li>• Blog Data</li> <li>• Fetching Data at Request Time</li> </ul>	Session 15 PowerPoints  Session 15 Challenge Code.zip	Next JS Assets Meta data & CSS  Next J S Tutorial Navigate Between Pages	3
16	4.5	ICTPRG4 30 E1-4 ICTDBS50 4 E1-3 ICTWEB5 03 E2-3	<b>Session 16: Dynamic &amp; API Routes</b>  In this Session you will cover the following tasks: Dynamic Routes <ul style="list-style-type: none"> <li>• Page Path Depends on External Data</li> <li>• Render Markdown</li> <li>• Polishing Post Page and Index Page</li> </ul> API Routes <ul style="list-style-type: none"> <li>• Creating API Routes</li> <li>• API Routes Details</li> </ul> Work on Assignment	Session 16 PowerPoints  Session 16 Challenge Code.zip	Work on Assessment 3  Next JS Dynamic Routes  Next J S Tutorial API Routes	4
17	4.5	ICTPRG4 30 E1-4 ICTDBS50 4 E1-3 ICTWEB5 03 E2-3	<b>Session 17: Project workshop and Completion</b>  In this Session you will cover the following tasks: Deploying Your Next.js App <ul style="list-style-type: none"> <li>• Push to Github</li> <li>• Deploy to Vercel</li> <li>• Next.js and Vercel</li> <li>• Other Hosting Options</li> </ul> Work on Assignment		Work on Assessment 3  Next JS Tutorial Deploying your Next JS app	4



			Complete Assignment and submit by end of session  <b>Assessment 3 Due</b>			
18	2.5		Feedback & resubmission			2
19	2.5		Feedback & resubmission			2
20	2.5		Results Entry			2
Total Hours		50			Total hours out of class activities	60
Total amount of training for this unit:						110





## Recognition of Prior Learning (RPL) / Credit

You may be eligible for Recognition of Prior Learning (RPL) / Credit towards your studies If you have relevant existing skills, knowledge, or formal qualifications. Please discuss available options with your lecturer.

## Reasonable Adjustment

We recognise that every student has different learning styles and needs. Please let your lecturer know if there is anything that may have an effect on your learning so they may be able to adjust your plan.

## Results and Appeals

Students may lodge an appeal against an academic result. Appeals must be lodged within four weeks from notification of the assessment result. Please see details under Academic Appeals on the NMT website.

## Absences

If you are unable to attend any class or assessment session you must inform your lecturer as soon as possible.

If you miss an assessment due to illness, please provide your lecturer with a medical certificate in order to negotiate an alternate time for the assessment.

## Plagiarism

Plagiarism is using another person's ideas and words without clearly acknowledging the source of the information. It is not acceptable to submit an assessment that is based on another person's work and claim it as your own. If you submit an assessment that is significantly or recognizably the same or similar in content as submitted by another student (current or past) you may have to submit another assessment.

## Assessment Resit/Resubmission

You shall be permitted to have at least two attempts to demonstrate competency against a unit of competency or cluster of units of competency.

To qualify for re-assessment:

- you must have made a reasonable attempt to complete the assessment satisfactorily  
AND
- you must have submitted the original assessment by the due date  
OR
- you must have attended and participated in the original assessment event

In the case of a re-assessment opportunity, your lecturer will give you a due date for your second attempt. Should you not achieve a Satisfactory result on the second attempt, you will need to re-enrol (R) in the unit.

Be aware, in certain situations there are limited reassessment options (such as one-off Performances and Exhibitions).