CAB432 Cloud Computing
Lecture 1 - Introduction

Faculty of Science

People, content and schedule

UNIT OVERVIEW

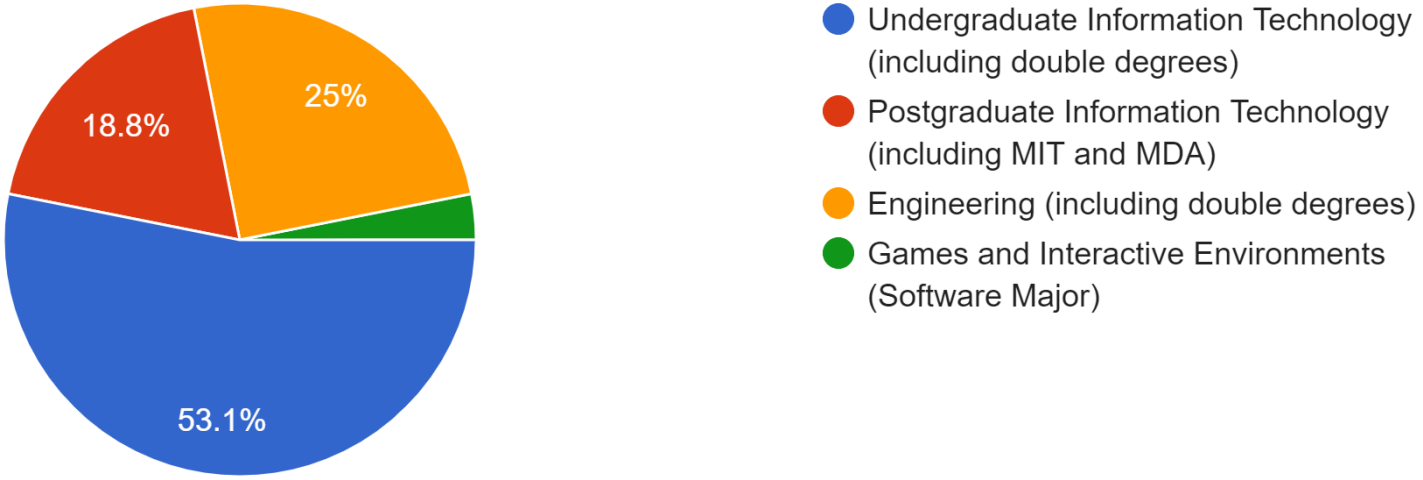
About Us

	Jim Hogan Associate Professor, School of CS. Office: S Block Level 12 1208 P: 3138 9328 E: j.hogan@qut.edu.au
	Iain Rouse Director & Country Leader | Worldwide Public Sector - Australia & New Zealand for AWS Iain will lecture some of the second half of the unit. Final lecture split TBC
Contact details on the BB Contacts page.	Tutors: • Kiara Davison • Michael Esteban • Chad Gay • Hui Law • Saskia Mathers (Marking and cover only)

About You

What is your current course?

32 responses



About You

How would you describe your knowledge of JavaScript?

32 responses

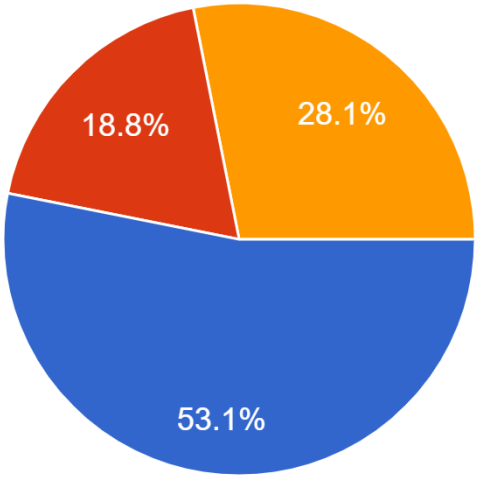
What You Need

- We don’t care about the client side
- DON’T rush out and learn React or Angular
- DO get up to speed with the basics if necessary
- Then follow our pracs and you will be fine by the time you need it.

About You

How would you describe your knowledge of the Web, including HTTP/HTTPS requests and responses and servers such as Node.js or Apache?

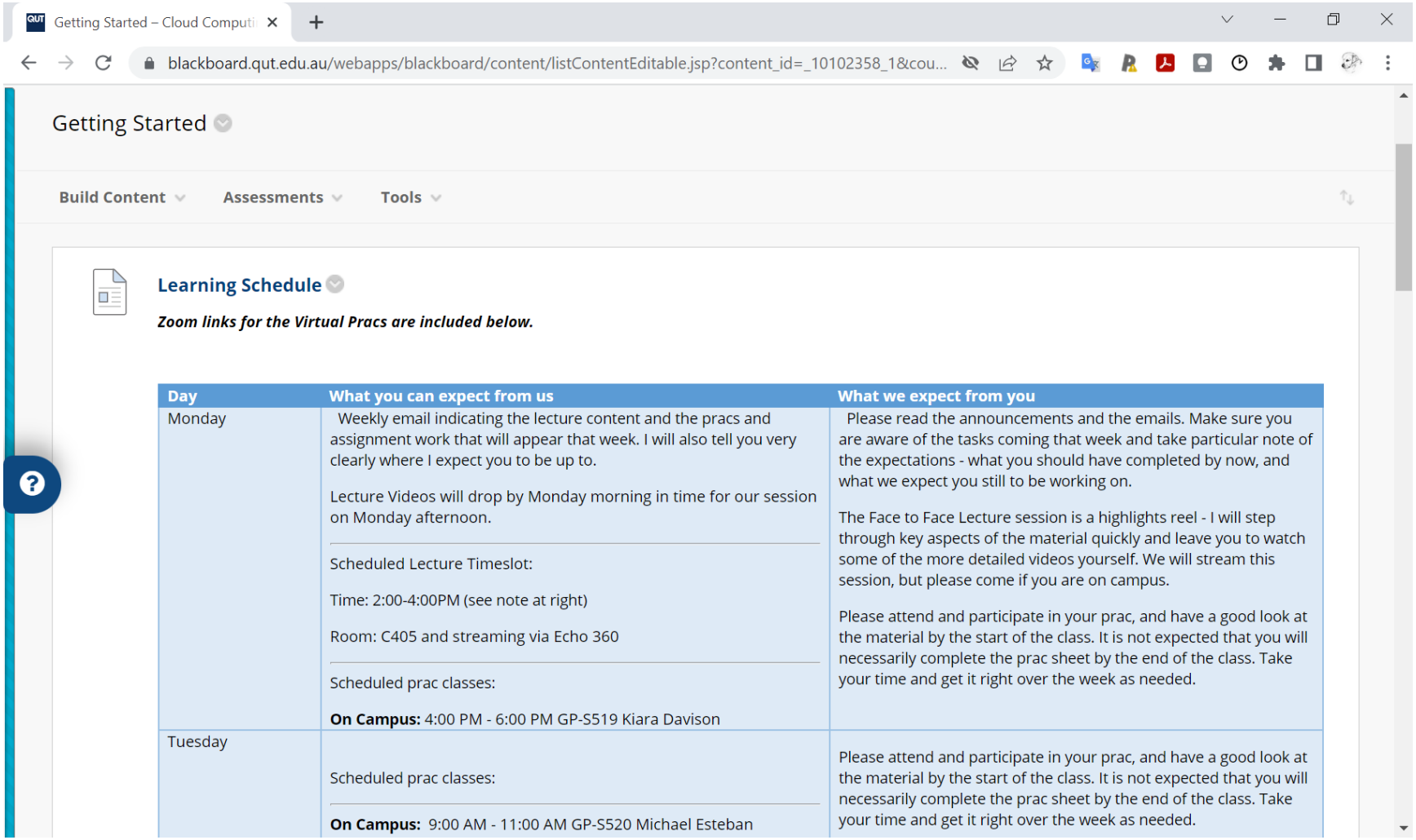
32 responses



What You Need

- You need to work with node and with web apps
- But we revise this in a cloud context, so don't panic
- Just make sure that do the pracs and you will be fine
- We will introduce things in context
- We will explain things in the lectures and pracs

Getting Started



Graphical Schedule

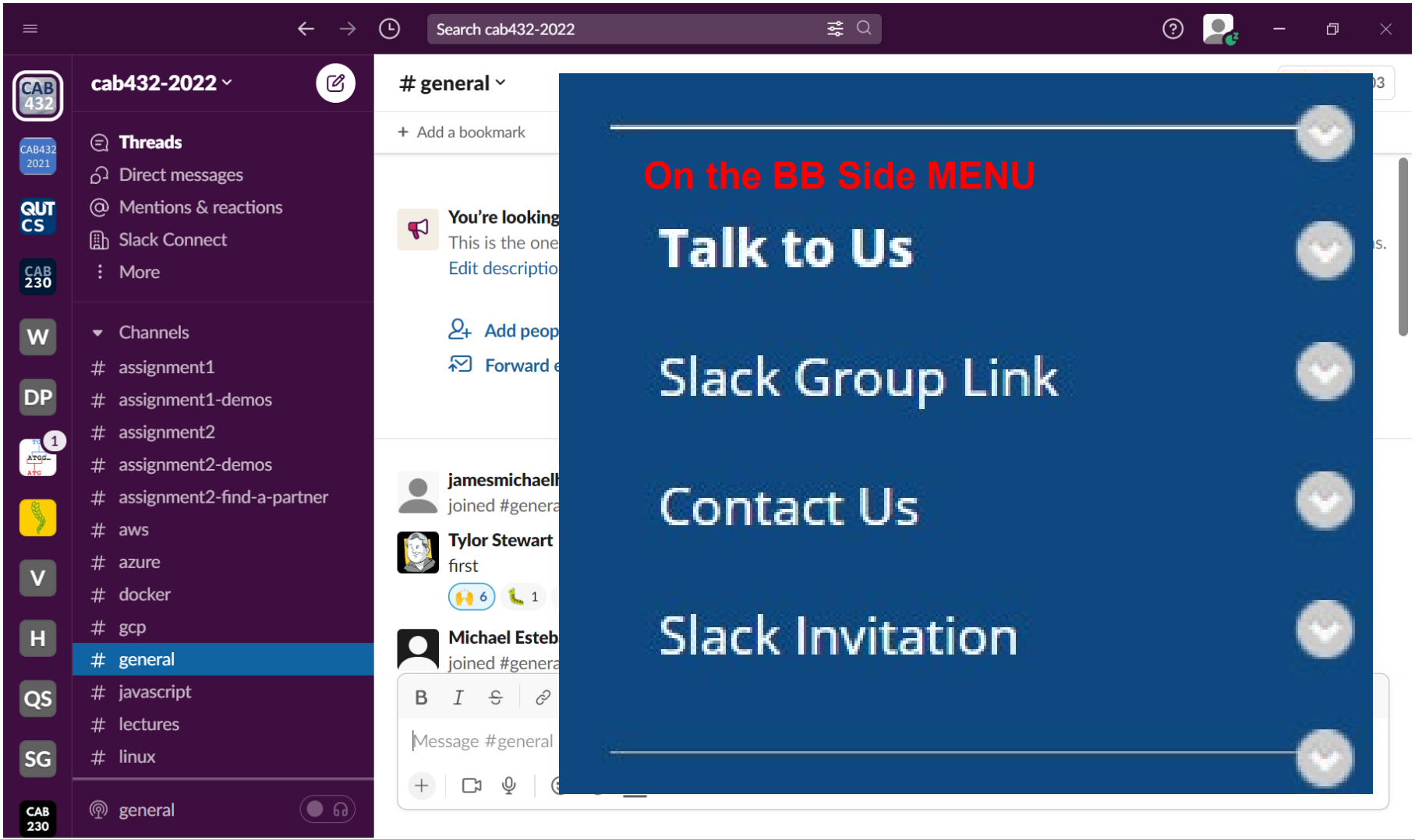
Class timetable for 2022/SEM-2 (25-Jul-2022 to 19-Nov-2022)

	Monday	Tuesday	Wednesday	Thursday	Friday
8am					
9am		9:00 - 11:00 PRC S-520 (Practical - On Campus Class (Weeks 1 - 13))	9:00 - 11:00 PRC S-506 (Practical - On Campus Class (Weeks 1 - 13))		
10am					
11am			11:00 - 1:00 PRC S-506 (Practical - On Campus Class (Weeks 1 - 13))		
12pm		12:00 - 2:00 PRC S-518 (Practical - On Campus Class (Weeks 1 - 13)) 12:00 - 2:00 PRC VIRT-OLT39 (Practical - Online Class (Weeks 1 - 13))			
1pm					
2pm	2:00 - 4:00 LEC C-405 (Lecture - On Campus Class (Weeks 1 - 13)) 2:00 - 4:00 LEC VIRT-OLT20 (Lecture - Live-Streaming Class (Weeks 1 - 13))			2:00 - 4:00 PRC VIRT-OLT43 (Practical - Online Class (Weeks 1 - 13))	
3pm			3:00 - 5:00 PRC S-506 (Practical - On Campus Class (Weeks 1 - 13)) 3:00 - 5:00 PRC VIRT-OLT12 (Practical - Online Class (Weeks 1 - 13))		
4pm	4:00 - 6:00 PRC S-519 (Practical - On Campus Class (Weeks 1 - 13))				
5pm					
6pm					

The Schedule

Activity	Day	Time	Location	Teaching Staff
Lecture	MON	2:00 PM - 4:00 PM	GP-C405*	Jim Hogan
Practical	MON	4:00 PM - 6:00 PM	GP-S519	Kiara Davison
Practical	TUE	9:00 AM - 11:00 AM	GP-S520	Michael Esteban
Practical	TUE	12:00 PM - 2:00 PM	GP-S518	Michael Esteban
Practical	TUE	12:00 PM - 2:00 PM	Zoom	Hui Eng Law
Practical	WED	9:00 AM - 11:00 AM	GP-S506	Chad Gay
Practical	WED	11:00 AM - 1:00 PM	GP-S506	Chad Gay
Practical	WED	3:00 PM - 5:00 PM	GP-S506	Chad Gay
Practical	WED	3:00 PM - 5:00 PM	Zoom	Kiara Davison
Practical	THU	2:00 PM - 4:00 PM	Zoom	Hui Eng Law
*: The lecture session will also be live streamed and recorded				
	Highlighting indicates virtual pracs: see Getting Started Guide			
	for the Zoom links for each prac.			

Slack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More
Channels
assignment1
assignment1-demos
assignment2
assignment2-demos
assignment2-find-a-partner
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docker
gcp
general
javascript
lectures
linux
general
general
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On the BB Side MENU
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Tylor Stewart
first
Message #general

Accounts and Infrastructure

- AWS cloud accounts will be provided via QUT
- They will be restricted, but fairly generous.

- You will use your QUT credentials to gain AWS access.
- You can use them *only* for CAB432 related work

- AWS and Azure have student grants
- You are free to use them, but be careful
- The environment will not match the pracs exactly
- Google requires a credit card for access

The topics we expect to cover

THE SCHEDULE

Unit Schedule (as at July 2022)

- Indicative schedule subject to minor revision
- Dates are the Monday of the week
- Week 1 (25/7): Introduction

- Week 2 (1/8): CaaS
  - The Container as a service model via Docker
  - Prac: Docker (Will run into week 3)

- [JS Suppport sessions running in weeks 2 and 3.]

Unit Schedule (July 2022)

- Week 3 (8/8): The Cloud Application
  - Cloud Pre-requisites, Revision of Web Computing
  - REST, HTTP requests, Intro to Node Web Applications
  - Prac: Finishing the docker exercises from last week
  - Prac: Node – leading into Week 4

- Week 4 (15/8): Advanced Node
  - Exploring a Node Web Application
  - Prac: A full node application exposing an API
  - Some overlap with the Web Computing unit, but very different prac focus.

Unit Schedule (July 2022)

- Week 5 (22/8): Cloud Architecture and Storage
  - Deeper treatment of the Cloud Application
  - Vendor agnostic persistence
  - Prac: Persistence in the cloud app
  - Prac: Assignment 1

- Week 6 (29/8): Load Balancing and AutoScaling
  - EC2, Load balancing, Scaling groups, Specialised services .
  - Prac: Scalability
  - Prac: Assignment 1

Unit Schedule (July 2022)

- Week 7 (5/9): Persistence and CAP
  - Persistence trade-offs at Scale and the CAP Theorem
  - Prac: Assignment 1
- Week 8 (12/9): Cloud Security
  - Encryption, Authorization, HTTPS, OpenID, OAuth
  - CORS, DoS, SQL Injection, Event-based security
  - Cloud Policies
  - Prac: Assignment 1

Unit Schedule (July 2022)

- Week 9 (19/9): Lambdas and Serverless Cloud
  - Lambdas, Serverless Architectures, Service Offerings
  - Prac: Catch-ups and demos
- (26/9): Mid-Semester Break
- Week 10 (3/10): Architecting for Cost
  - Trade-offs in large scale cloud architectures
  - Prac: Assignment 2; Remaining Assignment 1 demos

Unit Schedule (July 2022)

- Week 11 (10/10): Introduction to DevOps
  - Introduction to Dev Ops in a cloud environment
  - Prac: Assignment 2
- Week 12 (17/10): Swarm and Kubernetes
  - Orchestration of container clusters in a cloud environment
  - Prac: Assignment 2
- Week 13 (24/10): Guest Lecture
  - Recent Developments in Cloud

The Assessment (Summary)

- Individual Assignment (30%)
  - Docker and web app
- Assessed prac exercises (10%)
  - Scaling and load balancing
  - Persistence
- Paired Assignment (60%)
  - Auto-scaling of a serious application
  - Group mark: 45%
  - Individual: 15%