

FIT3143

Parallel Computing

Admin Overview

Vishnu Monn and ABM Russel



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Welcome and Icebreaker

Learning Outcomes

At the completion of this unit, students should be able to:

1. Explain the fundamental principles of parallel computing architectures and algorithms.
2. Compare and contrast different communication and concurrency schemes
3. Design and develop parallel algorithms for various parallel computing architectures
4. Analyse and evaluate the performance of parallel algorithms
5. Apply technical writing to effectively communicate parallel computing to a range of academic and expert audiences.

People you should know

- Paul, Zhinoos, Omar, Karan, Michael and Saksham in Australia
- Aitzaz, Sayyida, Ming, Usman and Shu in Malaysia
- Lecturer (MU Australia): ABM Russel
- Chief Examiner & Lecturer (Malaysia): Dr Vishnu Monn

About Vishnu

- **Dr Vishnu Monn, vishnu.monn@monash.edu**
- Academic at Monash Malaysia
- Course coordinator, Data Science
- B.Eng. (1st class Hons.) and M.Eng. Degrees in Electrical and Electronics Engineering, Ph.D. in Engineering
- Research: High performance computing, Predictive analytics, Machine learning, Image and video communication

About Russel

- **ABM Russel (Russel), abm.russel@monash.edu**
- Academic at Clayton
- Background is in Computer Science and an MBA
- Research: Distributed Systems and Networks
- Monash High Performance Computing

Contact

- Russel, Lecturer: during Lecture or by appointment
- Moodle forum
- Email: abm.russel@monash.edu
- I try to reply within 24-48h
- **Consultation times** Tuesday 3pm-4pm or by appointment

Important:

Only use your Monash email address!
Don't post answers to assignments in forums!

Resources

<http://moodle.vle.monash.edu/>

- **Reading material** to prepare for the lecture
- Lecture slides, Tutorial and Lab activities, software download links
- Assignments
- Discussion forums
- Unit guide
- No specific Textbook
- Online libraries

Anticipated Workload

- 2 hours lecture
- 2 hours per week Lab session
- 1 hour per week Tutorial session
- 6 hours per weekly assessment task-based work
- 2 hours per week reading

Labs

- Lab started **this week**
- Mix of revision of lecture material and hands-on tasks
- Labs are a great resource!
 - your tutors will help you get in-depth understanding of the topic
 - working in small groups during the lab, you help each other
- Please **only attend your allocated lab**
(if you *need* to swap, use Moodle forum / Allocate+ swap feature)

Tutorial

- Tutorial starts **in week 2**.
- Mix of revision of lecture material and concepts
- Prepare and participate!
 - your tutors will help you get in-depth understanding of the topic
 - working in small groups during the tutorial, you help each other
- Please **only attend your allocated tutorial**
(if you *need* to swap, use Moodle forum / Allocate+ swap feature)

Assessment

Assessment

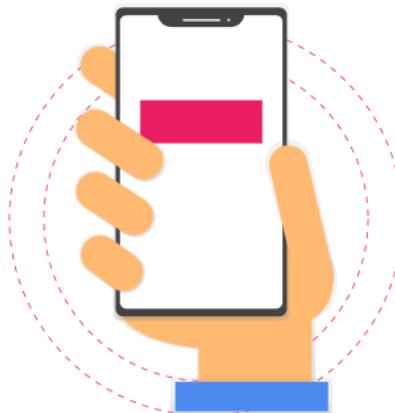
- 10%: Labs tasks in eFolio and Tutorial Quizzes in Moodle
- 40%: Two Assignments (due in Week 8 and 11)
- 50%: Exam (date TBD)
- **Hurdles:**
 - 40% of in-semester marks (Labs tasks + Tutorial Quizzes + assignments)
 - 40% of exam marks
 - 50% of overall marks

**if you fail a hurdle,
you fail the unit!**

Peer instruction and FLUX

- During the lecture we will do some polls
- Formative assessment and better learning experience
- They are not part of overall marks
- They help you check if you've understood
- They help me adapt the lecture

1. Visit <https://flux.qa/> on your phone, tablet or laptop
2. Log in using your Authcate details
3. Touch the + symbol
4. Enter the code for FIT3143: **JYGAFY**
5. Answer questions when they pop up
6. Give yourself a Display Name and manage your feed subscriptions here



To participate, go to

flux.qa/JYGAFY

FLUX: Your background

What is your background with respect to C programming?

- A. No C programming knowledge
- B. Some experience but no formal education in C programming
- C. Certification in C programming
- D. Formal education in C programming
- E. Both formal education and Certification in C programming

JYGAFY

How do we use FLUX?

- **Before each lecture:**
Moodle site specifies material to prepare
- **During the lecture:** 3-4 questions
 - if almost everyone gets the right answer, we go on
 - if most people get it wrong, I'll explain
 - if it's a mixed response, you discuss with your neighbours and then vote again

eFolio

- Receive **feedback** from tutor throughout the semester.
- In order to receive feedback for each task (to improve work before the final submission), it is advised to **upload eFolio** on the day in which the Lab occurred.
- Failure to have item in the eFolio by specific **Lab day** means that the provision of feedback is not guaranteed.
- These are indicators of performance for **improvement through feedback and some Lab tasks are graded**.

In-semester Assessments

- **Two types of assessments**
 - **Lab tasks in eFolio and Tutorial Quizzes** in Moodle
 - Lab tasks are due on Lab day and Quizzes are due in the following week.
 - worth 10% of final mark
 - **Assignments** in Moodle
 - Assignment 1 is due in week 8
 - Assignment 2 is due in week 11 and demonstration in week 12
 - worth 40% of final mark
 - **pair work**
 - you need **40% (combined) of in-semester assessments marks** (=20% of the unit marks) to pass the in-semester hurdle of the unit
 - more details later

Final Exam

- Worth 50% of your total unit marks
- You need **40% of exam marks** to pass the exam hurdle
 (=20% of unit marks)
- EXAM Platform (TBA)

Academic Integrity

- **Don't cheat!**
- It's unfair (to your fellow students, to your lecturer, to your tutors)
- **Read** the policy on cheating (see Moodle)
- Monash takes this very seriously
- Examples for cheating:
copy&paste answers to assignments, working together
on tasks that require individual submissions

How to succeed in FIT3143

- **Attendance:**
come to the lectures, tutorials and labs!
- **Participation:**
actively take part
- **Preparation:**
read through the material in advance
- **Questions:**
ask me, your tutors, your fellow students!
- **Seek help:**
Help Desks, counselling, medical services etc.

Seek Assistance

Student support services information can be found at:

<https://www.monash.edu/execserv/progress/student-resources2>

University Support Services Flyer:

https://www.monash.edu/_data/assets/pdf_file/0005/1247108/university-support-services-Jan.2018.pdf

Medical condition:

<https://www.monash.edu/disability/services-for-students>

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