

CPSC 457 Operating Systems

Lecture 1
Introductions, Overviews,
Operating Systems

CPSC 457 - Spring

Operating Systems

- Purposes of OS
- History of OS
- Processes
- Scheduling
- Resources
- Concurrency

Lectures (39 hours)

- M & W: 9-12

Labs

- M & W: 13-15 or
- T & R: 10-12

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Today

Course Introduction

- Who are we all?
- Outline
- Policies
- Assignments
- What do we know?

What is an Operating System For?

- What are the Functions?
- What are the Features?

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What is This Course?

Languages

General

Algorithms

High Level



Low Level

Assembly Specific

Metal

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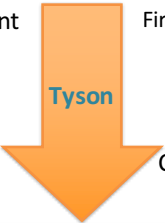
Who is This Guy?

Grad Student (PhD)

A.I. Researcher

Easily Distracted

Better to fight 100 duck sized horses



Tyson

First Time Instructor (for a half course)

Nerd (subtype: video game)

Coffee Powered

Likes Orange!

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Who are These Guys?

Mike

Reza

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Who Are You?

Ice Breaker

- Groups of 4(ish)
- Meet each other
- What OSs do you all know?
 - (and other questions)

The Course

13 Lectures – 7 Weeks

3 hours, 1 break, some group activities, curiosity driven

13 Tutorials

2 hours, tutorials, one-on-one time

3 Assignments

C, Linux

2 Exams

In Class Midterm (June 13), Registrar Final (July 2/4)

Information

Webpage

<http://pages.cpsc.ucalgary.ca/~tjkendon/cpsc457>

D2L

Assignments, Forums?

Wiki

http://wiki.ucalgary.ca/page/Courses/Computer_Science/CPSC_457.S2016

E-mail

tjkendon@ucalgary.ca - Include [CPSC 457] in the subject

Policies

Course Outline Sheet

<http://pages.cpsc.ucalgary.ca/~tjkendon/cpsc457/outline.pdf>

Safety

Emergency Meeting Place

Social Science: **Food Court**

Shortest Evacuation Route

Out the back door, past the washrooms

Campus Security (also Safewalk!)

403-220-5333 – Put it in your phone now

Contact Policies

E-mail

I check twice a day: noon(ish) & the end of the day
Make sure you include [CPSC 457] in the subject line

Office Hours

After lab on Monday and Tuesday – **at the CT desk**

Other Meetings

Available on Request

Respect

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Schedule

The Whole Schedule

http://wiki.ucalgary.ca/page/Courses/Computer_Science/C_PSC_457.S2016/Lecture_Schedule

No Class

Victoria Day: **May 23, 2016** (do go to lab on **Tuesday, May 24**)
Reading Week: May 26 – June 5, 2016

Final

July 2 or July 4 (more details to come!)

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Lectures

3 hours

- Abstract Concepts
- Usually 1 Big Topic each Lecture
- Try not to be 3 full hours of talking
 - 15 minute break
 - Different Activities

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Scribes

Note Takers for Everyone

- Create Notes to Share on the Course Wiki
- Help everyone, help yourself! (Teaching is the best way to learn!)
- Get a 10% bonus

Talk to me at the break or after Lecture

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Tutorials

2 hours

- Practical Topics
 - How to work with the OS
- Work Time
 - Get advice while you work

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Assignments

Assignment 1

How do we use what the OS gives us?

Assignment 2

How do we give people things as the OS?

Assignment 3

How do we do things at the same time?

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Assignments

Develop in C, Target Linux

Get a hands on look at how an Operating System is developed
 Learn the links between the abstract concepts and the concrete implementations
 Use the tools that get used building an Operating System

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How to do well on the Assignments

Be Hands On

You will learn more programming than you ever will just reading the documentation.

Start Early

Take the time to really know what you're doing and be prepared to deal with your bugs.

Read the Docs

Everything you need to know is out there, you just have to read the docs carefully.

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Exams

Closed Book – 1 page of notes

Midterm (15%)

In Class – June 13 – in ICT 102 (starting at 9:00)

Final (35%)

In Class – July 2 or 4 – Registrar Scheduled

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How to do well on the Exams

Start Early

A little review each day will help you remember the material better than reviewing everything at the end

Do Practical Things

Play with Linux, do exercises from the book, test stuff out in the real world, practice makes for better memorization

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Texts

Operating Systems

Modern Operating Systems (4th ed)
 Tanenbaum & Bos, *Pearson* 2015

Or

Operating System Concepts (9th ed)
 Silberschatz, Galvin & Gagne, *Wiley* 2013

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Texts

C

The C Programming Language
 Kernighan & Ritchie, *Prentice Hall* 1988

Or

C: A Reference Manual
 Harbison & Steele, *Prentice Hall* 2002

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Texts

Linux Programming

Linux Kernel Development (3rd ed)
Love, Addison Wesley 2010

Questions?

Break time

After the Break:
What does an OS *do* anyway?

So What does an OS Do?

What functions does an Operating System provide? What features does an Operating System have?

Let's Take A Tour

Department Compute Servers

http://www.cpsc.ualgary.ca/tech_support/services/remote_access

Let's Make a List

Break into groups of four (or so) and make two lists.

1. What do you think an Operating System does?
2. What do you think is the difference between an Operating System and a 'regular' program?

When you're happy with your list, bring it up and add it to the boards at the front.

So what's on our list?

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Operating Systems (at their Core)

Load programs and manage their execution

Mediate access to hardware

Manage time (computation) and space(memory)

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What questions do you want to answer?

Write them on the index cards or e-mail them to me.

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Next Time

History

Hardware

Operating System Concepts

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