CPSC 231 - Organization

Introduction to Computer Science I (For CS Majors)
Fall 2019

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Welcome!

Jonathan Hudson

Lectures: Tuesdays and Thursdays 15:30-16:45 ST 145

Jonathan Hudson

Office: ICT 513

Office hours: 2:00-2:50 PM Mondays and Wednesdays or by email-scheduled appointments.

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http://pages.cpsc.ucalgary.ca/~hudsonj/CPSC231F19/

Why Computer Science?

- All sciences are impacted by computer science
- Opportunities for multidisciplinary study, work, and research
- Exciting innovations and discoveries that change our lives
- Fascinating subject with fun experiences and an extraordinary potential

- You will learn cool ways to solve problems
- You can enjoy being extremely creative

Course Goal

From the calendar:

- “Introduction to problem solving, the analysis and design of small-scale computational systems, and implementation using a procedural programming language. For computer science majors.”

Goals:

- Design solutions to solve small scale and realistic problems
- Write programs based on a given design
- Debug and test programs
- Analyze your solution and the quality of your programs

Lectures

We will learn fundamentals of programming using Python

We will cover:

- Variables
- Arithmetic operations
- Conditions and Loops
- Functions
- Strings, Lists, Dictionaries, Tuples
- Classes and objects
- Recursion, etc.

Top Hat

- Download the top hat app on your smartphone got to TopHat on laptop.

- Create an account if you don't have one.
- Search for "Calgary" and select University of Calgary
- Course Code: **CPSC 231 Join Code: 267418 Password: CPSC231**
- https://app-ca.tophat.com/e/267418/
- **No marking or attendance records**

Out of lecture?

There is no attendance at tutorials but they are highly recommended

- Start Wednesday/Thursday next week
- Desktop computers (Need CPSC account to log in)
- TAs will use classes to cover coding material in hands-on environment
- Material will be covered and there will also be assignment work/help

There will be limited CT (Continuous Tutorial)

- Row of computers outside Help Desk
- By strict schedule posted in lab and on course website

There is an out-of-class midterm scheduled

- Friday, October 25, 2019 at 7:00 pm

Grading

Component	Weighting %
Assignments (4)	6%,8%,8%,8%
Midterm	30%
Final	40%

- Each of the above components will be given a letter grade using the official University grading system. The final grade will be calculated using the grade point equivalents weighted by the percentages given above and then converted to a final letter grade using the official University grade point equivalents. (A+ are 4.3 for in-class component weighting)
- Must obtain a C- or better average on the exams to receive a C- or better in the course

Assignments

- Four individual assignment (30%) consists of programming questions
- Each assignment is due at 11:59 pm on the Friday due date.

Assignments	Due at 23:59
Assignment 1	Sept 27
Assignment 2	Oct 18
Midterm	**Oct 25**
Assignment 3	Nov 8
Assignment 4	Nov 29

Course Policies

- When you email include your first name, and last name.
- Please use “CPSC231F19” as the prefix in the subject line

- Make-up examinations and deferred examinations will not be provided except in cases of extreme personal emergencies. If you miss midterm your final will take the full 70% weight of the two exams. Also happens if you do better on the final!
- There are no late submissions. Submit early and double check after submitting. You can submit multiple times on D2L with no issue, so excuses will not be accepted.

Class Norm

- Respect others:
  - Keep your cell phone in silence mode
  - Arrive on time
  - Do not chat with your neighbors
  - Avoid any activity that might disturb your classmates

Academic Dishonesty

- *"A single offence of cheating, plagiarism, or other academic misconduct, on term work, tests, or final examinations, etc., may lead to disciplinary probation or a student's suspension or expulsion from the faculty by the Dean, if it is determined that the offence warrants such action."*
- We have tools that let me quickly see if assignments appear to be highly similar and techniques like changing names, comments, and other details will not trick them.
- Please refer to the University Calendar for more details.
- **This course is fundamental and is essential for CS studies.**

Academic Dishonesty

- *All the work you submit must be your own.*
- *When you take algorithms or segments of code from somewhere else you must cite where you obtained them from.*
- *You need to understand all of the code in your work because the midterm and final are evaluating your understanding, not if you were able to make it work*

Be Computer Science 'Lazy'

- Search internet for answers.
- If you find something, read and **understand** it.
- Then develop **your own** solution using what you've learned.

- Do not copy and paste the answer! It is considered plagiarism!

- Being computer science lazy is an important skill and we will return to it.

Getting Help

- Do your part: Attend the lectures and tutorials
- Act early!
- First try it yourself→
  - Study the material carefully
  - Break the problem down
  - Try to narrow down the question
  - Search on google for your answer
- Still unclear?
- Ask your TA
- Come to my office ☺

Crisis line!

- If you think:
  - You suck at programming!
  - You suck at python!
  - You are not sure about this course!
  - You are OK with only a passing mark!!!
  - You tried but you didn't understand!
- Come to my office → I'll prove to you that you are wrong!
- Come early before things piled up!

Computer Programming

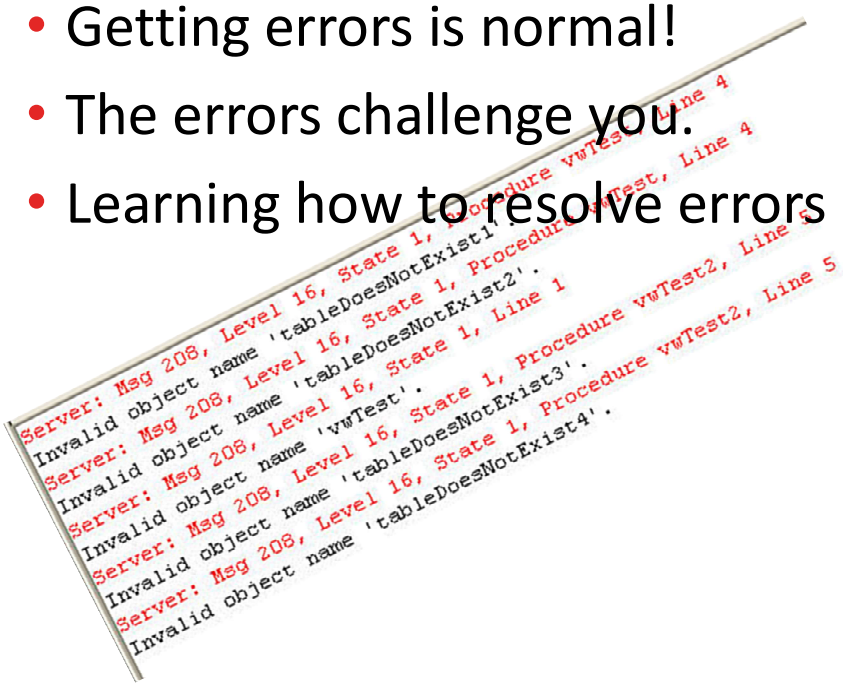
- Providing precise instructions for the computer to execute.
- Programming is control
- The computer does exactly what you tell it to do → requires special attention to detail.
- Programming copes with change
- It is difficult to write perfectly crafted, useful, and flexible programs → Very valuable

Problem solving process

- Problem solving
  1. Analyze goals and requirements
  2. Design a high-level solution
  3. Write code

Programming errors

- You WILL get errors → It does NOT mean you suck at programming!
- Getting errors is normal!
- The errors challenge you.
- Learning how to resolve errors is an important skill.



Why Python 3?

- Python is a widely used high-level programming language for general-purpose programming

- Design philosophy emphasizes code readability
  - Whitespace indentation
  - Code blocks
- Efficient syntax
  - Allows programmers to express concepts in fewer lines of code

Technology?

- Coding is a new skill!!!
- Pen and Paper Studies have shown that the process of taking notes on a lecture by hand help improve recall of the material over taking notes electronically.
- Working many of the problems we will experience in this course by hand will also help change your mental process and prepare you better for the exams

To do list

- Please make sure your CPSC account is setup ASAP
  - Log on to one of the machines in your lab.
  - Go to the IT Support Centre (Math Sciences 7th Floor) if there is a problem or you have a question

- Install Python 3 on your laptop
  - Some instruction on D2L or Go To You Tutorial Next Week!!!

Access to CPSC

- The CPSC lab is your primary work environment for this course.
- Assignments & exercises are acceptable if they run on labs machines
- Please follow the rules in the labs → No food or drink
- You can also access the CPSC lab remotely.
  - SSH (Secure Shell) allows you to establish a remote connection with the CPSC lab.
  - https://ucalgary.service-now.com/it?id=kb_article&sys_id=29aedd1bdb3e63c0d1b63ccb7c961963
- Please do not use any non-Linux-based CPSC server for this course.

SAFEWALK

- 24 hours a day and seven days a week, Safewalk volunteers walk people safely to their destination on campus. This service is free and available to students, staff, and campus visitors.
- Safewalks are done in male/female pairs. The volunteers walk anywhere on campus (including McMahon Stadium, Health Sciences, Student Family Housing, the Alberta Children's Hospital and the University LRT station).
- **Requesting Safewalk volunteers to walk with you is easy!**
  - Call Campus Security @ 403-220-5333 (24 hours a day/seven days a week, 365 days a year)
  - Use the Help Phones (they are not just for emergencies)
  - Approach an on-duty SafewalkV olunteer and request a walk

Editors

- Tools that allow you to create or make changes to a text file, commonly referred as text editors.
- Notepad ++ (Windows), atom.io, sublime text, pycharm, IDLE
- Text editors on the lab computers: *gedit*, both can be found in *Applications -> Accessories*
  - *emacs*