UNIVERSITY OF WATERLOO
FACULTY OF ENGINEERING
Department of Electrical &
Computer Engineering

ECE 150 *Fundamentals of Programming*

Welcome to ECE 150
Fundamentals of programming

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Outline

- In this lesson, we will have
  - Gone over the main sections of the course syllabus

Course outcomes

- By the end of this course, you will be able to
  - instruct computers to carry out operational tasks using the C++ language,
  - demonstrate ability to perform both procedural programming and object-oriented programming.
  - develop and implement programs to solve electrical and computer engineering,
  - demonstrate ability to test and debug programs, and
  - demonstrate ability to analyze program performance.

Territorial acknowledgement

We acknowledge that we live and work on the traditional territory of the Attawandaron (Neutral), Anishnaabeg and Haudenosaunee (Iroquois) peoples. The University of Waterloo is situated on the Haldimand Tract, the land promised to the Six Nations of the Haudenosaunee (the Cayuga, Mohawk, Oneida, Onondaga, Seneca and Tuscarora peoples) that includes six miles on each side of the Grand River.

Course topics

- The topics that will be covered include:
  - programming fundamentals:
    - syntax, functions, types, parameters and variables, control statements, arrays and structures,
  - addresses and pointers,
  - intermediate programming concepts,
  - searching algorithms,
  - sorting algorithms,
  - classes,
  - linked lists, and
  - inheritance and polymorphism.

Course websites

- Lecture material and notes are available
  - https://ece.uwaterloo.ca/~ece150/
- Additional material would be available on LEARN
  - https://learn.uwaterloo.ca/

Course grading scheme

- You will be required to complete five components
  - Assignments
  - Projects
  - Quizzes
  - Mid-term examination
  - Final examination
- Your final grade will be computed differently based on the weighted average of the examination components
  - Please see course syllabus for details
- Late policy
  - No late submissions will be accepted

Course instructors

- Prof. Douglas W. Harder
  - Email: dwharder@uwaterloo.ca
  - Office: EIT-4018

- Prof. Hiren Patel
  - Email: hiren.patel@uwaterloo.ca
  - Office: E5-4018
  - Research interests
    - Embedded systems
  - Website: https://caesr.uwaterloo.ca

Communication with instructor

- Email is a good way to reach me, but please follow a few simple guidelines
  - Only use your uWaterloo email address to send email
    - No forwarding through gmail or others
    - You can send me email using LEARN as well
  - Put "ECE150F19" in the subject to increase the priority
  - Be concise and clear when describing your concern
  - Be patient, I'll do my best to respond to you quickly
    - You can always talk to WEEF Tas

Collaboration versus plagiarism

- We encourage students to work together
  - Teaching others is one of the best way to ensure you have a mastery of the subject matter
  - You may assist your friends
  - You should only examine another student's code if you believe you have a reasonable solution, and they are clearly having issues that you have already solved
  - You should help the student you are helping understand the problem
    - Never give the student the correct solution—this will not help that individual and they will become dependent on you
    - They will know you are a source of answers

Academic misconduct

- It is considered to be *academic misconduct* if:
  - You send your solutions in any format (including a verbal reading thereof) to anyone else, even if they then forward those solutions to a third party
  - You submit code that you were not the sole author thereof
  - You edit or dictate someone else's code
  - You search the web for a similar problem with a posted solution
  - You get a solution from a student in a previous year and submit it, or something very similar with only cosmetic or minor changes
  - You post your code on **GitHub** or any other publicly accessible web site and someone else downloads and submits your code

Penalties

- If you are found guilty of academic misconduct, the result is
  - Zero on the entire assessment
  - A penalty of 5% from your final grade per infraction
- On subsequent offences, the penalties may increase:
  - A required selection of courses in ethics
  - A failing grade in the course
  - A two-year suspension
  - A 7-year suspension
  - Expulsion

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How to succeed

- Attend lectures and take notes
  - They should make it easier to understand the main concepts
- Practice programming
  - There is no substitute for solving problems using programming
- Clarify confusions *early*
  - Seek help from WEEF tutors and TAs
  - Ask instructor
- Review lecture materials *before* and *after* class
  - Repeated review of the content will help you remember concepts
- Work ahead
  - A large portion of the course's lecture material is already available for you to study in advance

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Summary

- Following this lesson, you now
  - Understand this course's outcomes and topics
  - Know the grading scheme
  - Understand the policies related to plagiarism, penalties, and late submissions
  - Have been provided suggestions on how to succeed in this course

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References

[1]   No references?

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Colophon

These slides were prepared using the Georgia typeface. Mathematical equations use Times New Roman, and source code is presented using Consolas.

The photographs of lilacs in bloom appearing on the title slide and accenting the top of each other slide were taken at the Royal Botanical Gardens on May 27, 2018 by Douglas Wilhelm Harder. Please see

https://www.rbg.ca/

for more information.

Disclaimer

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