

ITI 1121. Introduction to Computing II[†]

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[†]Please don't print these lecture notes unless you really need to!

Administration

Objectives:

1. Learning the requirements for this course
2. Understanding the consequences of plagiarism

Lectures:

- ▶ www.site.uottawa.ca/~turcotte/teaching/iti-1121
- ▶ web5.uottawa.ca/mcs-smc/academicintegrity/home.php
- ▶ www.uottawa.ca/plagiarism.pdf

Motd

Finally, our findings have significant implications for the education of tomorrow's scientists and science policy and funding. **Scientists will need to be completely computationally and mathematically literate, and by 2020, it will simply not be possible to do science without such literacy.**

2020 Science. Microsoft Research Report

research.microsoft.com/en-us/um/cambridge/projects/towards2020science/



Attention!

- ▶ Any change to the syllabus must be discussed today!
- ▶ After that, it is considered **set in stone for the semester!**

Contact details

- ▶ Tuesday 10:00–11:30 and Thursday 8:30–10:00 (CBy D 207)
- ▶ Office hours: to be determined
- ▶ www.site.uottawa.ca/~turcotte/teaching/iti-1121
- ▶ virtualcampus.uottawa.ca
- ▶ turcotte@site.uottawa.ca
- ▶ Office STE 5-003
- ▶ (613) 562-5800, 6660

About me

- ▶ 1995 Ph.D. Computer Science and Operations Research (Université de Montréal)
- ▶ 1995-97 University of Florida (Chemistry)
- ▶ 1997-00 Imperial Cancer Research Fund, London/UK
- ▶ Coordinator of the multidisciplinary master degree program in bioinformatics
- ▶ B.Sc. Computer Science, with bio-informatics option

Evaluation

- ▶ Midterm test: 20 %
- ▶ Final exam: 40 %
- ▶ Assignments (4): 30 %
- ▶ Laboratories (12): 10 %

The combined mark for the examinations must be at least 50%, a failure to the examinations implies a failure for the course!

Examinations

- Midterm ▶ Saturday February 19 2011, 10:00-12:00
 - ▶ Room: TBA
 - ▶ Closed book
- Final ▶ Closed book

Assignments

- ▶ 4 assignments
- ▶ Each one counts
- ▶ Should run under Java SE JDK 5.0 or greater, as installed in SITE
- ▶ Excellent preparation for the midterm and final examinations
- ▶ **Each is done in teams of two or individually**

Laboratories

- ▶ Hands on exercises (from previous assignments)
- ▶ But also, input-output, graphical user interface and JUnit
- ▶ **Start during the week of January 10!**



Academic Integrity

Copying of assignments, even with substantial changes, is a serious form of academic fraud and will not be tolerated. The possible penalties for academic fraud are listed in the Policy on Academic Fraud:

- ▶ web5.uottawa.ca/admingov/regulation_13.html
- ▶ web5.uottawa.ca/mcs-smc/academicintegrity/home.php
- ▶ www.uottawa.ca/plagiarism.pdf

Academic Fraud

- ▶ All the parties involved will be penalised
- ▶ **Students giving away their solution to others will be penalized**
- ▶ Do not let anyone know your password
- ▶ Do not leave your workstation unattended while you are logged in

It is your responsibility to ensure that your work is not copied by someone else.

Academic Fraud: Assignment 1

This part of the assignment is meant to raise awareness concerning plagiarism and academic fraud. Please read the following document.

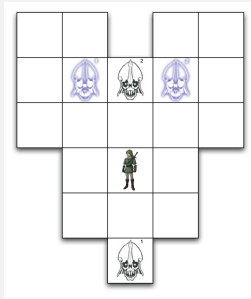
- ▶ web5.uottawa.ca/admingov/regulation_13.html

By submitting this assignment, you acknowledge 1) having read the above document and 2) you understand the consequences of plagiarism.

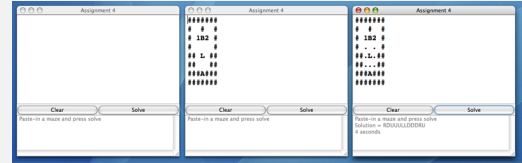
Academic Fraud: Cases

- ▶ Someone asks you for your assignment
 - ▶ this is a friend
 - ▶ he/she is too late to complete the assignment...
 - ▶ **all parties involved get 0**
- ▶ You are stuck
 - ▶ you develop a solution with another group
 - ▶ **the mark is divided by the number of participants**
- ▶ Other sanctions, the file is sent to the Vice-Dean of Academic Affairs: student gets 0, for the assignment, for all the assignments, for all the non-test components of the course, for the course, student is required to take an ethic course, student is expelled.

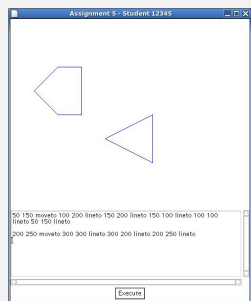
Assignments



Assignments



Assignments



Assignments



Course Objectives

- ▶ Our main objective is to develop a strong understanding of **abstract data types** (ADT), and in particular of lists, stacks, queues and binary search trees.
- ▶ In order to develop elegant and robust implementations, a good understanding of the concepts of **object oriented programming** is needed: encapsulation, inheritance and polymorphism.
- ▶ An introduction to graphical user interfaces (GUI) as well input/output systems (I/Os) will be presented.

Difficulties

- ▶ The high level concepts are easy to grasp
- ▶ The main difficulty is to translate these **high level concepts into concrete implementations**
- ▶ **Do all the assignments!**
- ▶ **Do all the laboratories!**
- ▶ Try having a positive attitude towards programming
- ▶ Smile!

Difficulties (contd)

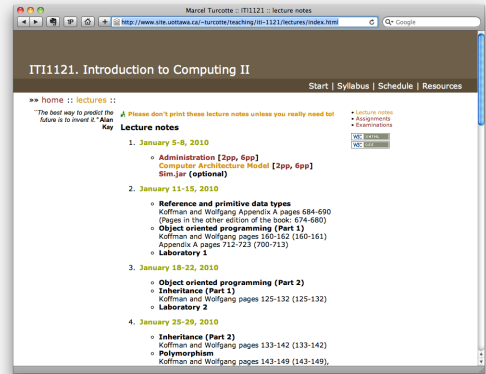
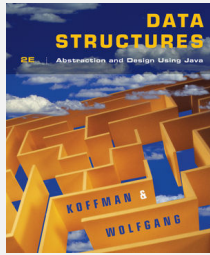
20	12.9%	A+
12	7.7%	A
13	8.4%	A-
13	8.4%	B+
8	5.2%	B
2	1.3%	C+
7	4.5%	C
5	3.2%	D+
12	7.7%	E
11	7.1%	F
13	8.4%	INC
39	25.2%	Withdraw

We tend to look at the teacher/learner relationship the wrong way around: it's not that the teacher teaches; it's that the student learns.

Pragmatic Thinking and Learning — Andy Hunt

Textbook

- ▶ E. B. Koffman and W. P. A. T. Data Structures: Abstraction and Design Using Java. John Wiley & Sons, 2e edition, 2010.



Textbook (alternative)

Can you recommend a more affordable textbook?

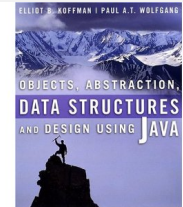
- ▶ E. Koffman and P. Wolfgang (2005) *Objects, Abstraction, Data Structures and Design: Using Java Version 5.0*. Wiley, 880 pages. (ISBN: 0-471-69264-6)



Textbook (alternative)

Can you recommend a more affordable textbook?

- ▶ E. Koffman and P. Wolfgang (2005) *Objects, Abstraction, Data Structures and Design: Using Java*. Wiley, 864 pages. (ISBN: 0-471-46756-1)



Textbook (alternative)

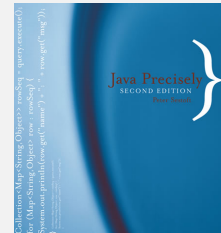
Can you recommend an even more affordable textbook?

- ▶ CSI 1101. Introduction to Computer Science II ISBN = 0-390-38637-5 (or 0-390-384631).
- ▶ Java Structures: Data Structures in Java for the Principled Programmer by Duane A. Bailey
 - ▶ www.cs.williams.edu/~bailey/JavaStructures/Book.html

Textbook (alternative)

I have no prior knowledge of Java, can you recommend a textbook?

- ▶ P. Sestoft. *Java Precisely*. The MIT Press, second edition edition, August 2005. (\$ 16.07)



Textbook (alternative)

I did not understand object-oriented programming at all last Fall, can you recommend a good introduction to object-oriented programming?

- ▶ D. J. Barnes and M. Kölling. *Objects First with Java: A Practical Introduction Using BlueJ*. Prentice Hall, 4e edition, 2009.



Netiquette (RFC 1855)

- ▶ www.dtcc.edu/cs/rfc1855.html
- ▶ This document provides a minimum set of guidelines for Network Etiquette (Netiquette) which organizations may take and adapt for their own use.
- ▶ ... general, it's a good idea to at least check all your mail subjects before responding to a message ...
- ▶ ... overnight to send emotional responses to messages ...
- ▶ ... should have a subject heading ...

Netiquette

Subject: ITI1121 - Assignment 1, question 3, what is ...

Greetings,

Body of the message.

Your name
Student id

- ▶ where "Greetings" can be replaced by any of the following: "Hi", "Marcel", "Dear Professor", "Dear Sir", etc.
- ▶ Beware spam traps are particularly sensitive to E-mails from yahoo, hotmail, etc.




Summary

- ▶ Combined score for examinations must be at least 50%
- ▶ Do all the assignments
- ▶ Do all the laboratories
- ▶ Plagiarism will not be tolerated

Next lecture

- ▶ Primitive vs reference types
- ▶ Call by value
- ▶ Scope

References I

- ▶  E. B. Koffman and Wolfgang P. A. T. *Data Structures: Abstraction and Design Using Java.* John Wiley & Sons, 2e edition, 2010.
- ▶  P. Sestoft. *Java Precisely.* The MIT Press, second edition edition, August 2005.
- ▶  D. J. Barnes and M. Kölling. *Objects First with Java: A Practical Introduction Using BlueJ.* Prentice Hall, 4e edition, 2009.



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