Lecture 00

Lect. PhD.
Arthur Molnar

Introduction
to course
Schedule
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grading

Introduction to Course

Lect. PhD. Arthur Molnar

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Overview

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Guiding professors

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- Lect. PhD. Arthur MOLNAR
- Lect. PhD. Maria-Iuliana BOCICOR
- Lect. PhD. Gaceanu Radu
- Lect. PhD. Mihoc Tudor
- Assist. PhD. Mircea Ioan-Gabriel

Schedule

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- **Lecture**: 2 hours/week
- **Seminar**: 2 hours/week
- **Laboratory**: 2 hours/week

Course materials

Go to: http://www.cs.ubbcluj.ro/~arthur/, section **Teaching**

Email: **arthur@cs.ubbcluj.ro**.

Note!

We only reply to emails from the @scs domain

Objectives

What should you gain from this course?

- Learn key programming concepts
- Learn the basic concepts of software engineering (design, implementation and maintenance of software systems)
- Learn to use basic software tools such as IDE's, documentation generators, testing tools
- Learn the basics of the Python programming language
- Acquire and improve your programming style.

Course content

How is this course organized?

- Programming in the large
- Programming in the small

Programming in the large

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1 Introduction to Python
2 Procedural programming
3 Test Driven Development
4 Modular Programming
5 Design Principles for Modular Programs
6 Exceptions
7 User Defined Types
8 Introduction to UML
9 Design Principles for Object Oriented Programs
10 Program Testing. Refactoring.
11 Layered architecture. Inheritance. TkInter

Programming in the small

12 Recursion

13 Computational complexity

14 Searching. Sorting

15 Problem solving methods

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1. Kent Beck - **Test Driven Development: By Example**; Addison-Wesley Longman, 2002.

2. Kleinberg and Tardos **Algorithm Design**; Pearson Educational; 2014 (http://www.cs.princeton.edu/ wayne/kleinberg-tardos/)

3. Martin Fowler - **Refactoring. Improving the Design of Existing Code**; Addison-Wesley, 1999. (http://refactoring.com/catalog/index.html)

4. Frentiu, M., H.F. Pop, Serban G. - **Programming Fundamentals**; Cluj University Press, 2006

5. Online Python resources - https://docs.python.org/3/reference/index.html, https://docs.python.org/3/library/index.html, https://docs.python.org/3/tutorial/index.html

Activity and grading

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- **30%** - Laboratory work (programs, documentations, tests **(L)**
- **30%** - Practical test (in the regular session) **(T)**
- **40%** - Written exam (in the regular session) **(W)**
- **0** - **0.5p** Seminar activity (bonus to final grade)
- **0** - **1p** Additional laboratory activity (bonus to final grade)

NB!

To enter the exam during the regular session, minimum grade is = **5 at L,T and W**

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Grading example

Suppose your grades are:

- Laboratory - 6.55
- Written - 7.50
- Practical - 6.80
- Seminar bonus - 0.40
- Laboratory bonus - 0.20

Your grade is calculated as: 0.3 * 6.55 + 0.4 * 7.5 + 0.3 * 6.8 + 0.4 + 0.2 = 7.00 + 0.4 + 0.2 = 7.60, final grade is 8)

Course Rules

1. General
   - Seminar attendance mandatory **(10/14)**
   - Laboratory attendance mandatory **(12/14)**
   - Without making attendance you can't enter the exam this year!
2. No open laptops or phones during lecture
3. Do not copy assignments or plagiarize
4. Detailed rules for laboratory in the same directory as lab assignments