122COM: Module information

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Overview

Evaluation

C

10 credit module. Full coursework evaluation

- MCQ Week 5 (20%)
- MCQ Week 10 (20%)
- ALL project (60%)
  - Alternative project for retake students.
  - Alternative project for Jan starters.

Weekly topics

1. Algorithms
2. GUIs
3. C++ intro
4. Searching algorithms
5. Profiling and complexity
6. Database integration
7. Memory
8. Data structures
9. Sorting
10. Testing

Order of topics may change.

Weekly structure

New topic introduced each week with lecture. Accompanied with practical coding exercises to be completed during the lab.

- Pre-lab work each week will be set (same as 121COM).
  - Not optional (same as 121COM).

- Material will be marked using traffic light system (same as 121COM).
  - Understanding green material required to pass module.
  - Understanding yellow material should produce good mark.
  - Red material is advanced, for students with previous coding experience or students looking to stretch themselves. It is not testable.

Languages

Assuming you have working knowledge of Python3.

C++11 introduced during the module

- Majority of students expected to work in C++.
- Tested on C++ syntax during phase tests.

BIT/ITB and Multimedia Computing students

- Expected to complete some C++ labs
- Will not be asked questions regarding C++ syntax during phase tests.
- Can be asked generalised questions re. differences C++ &. Python.

Module Aims

- Write GUI and/or database integration code.
- Write and understand algorithms.
  - Searching algorithms.
  - Sorting algorithms.
  - Algorithmic complexity.
- Write some C++ code.
  - BIT & MC will not be tested on C++ syntax.
- Understand memory.
  - Pointers.
  - Stack and Heap.
- Understand data structures.
  - Stack.
  - Queue.
  - Array.
  - Vector.
- Understand testing.
  - Automated testing.

Contact time

The module runs in one semester over 11 weeks.

- 2 hours contact time a week as single lecture/lab block.
  - Students expected to spend additional 4 hours self study.
- Additional support available as part of programming support centre
  - `https://gitlab.com/coventry-university/programming-support-lab/wikis/home`

Reading

There is no required reading for this module.
However, the following resources can be recommended.

- Python
  - Learning Python, 5th Edition. Mark Lutz, OReilly.
  - Automate the Boring Stuff with Python, Al Sweigart. Free PDF version online.
  - The 121COM material and reading list.
- C++
  - C++ Programming In Easy Steps, 4th Edition. Mike McGrath.
  - Penguin programmer - An excellent beginners C++ guide. `http://www.penguinprogrammer.co.uk/c-beginners-tutorial/`.
  - Learncpp - A more advanced C++ guide that goes into greater depth. `http://www.learncpp.com/`

Codio

Using Codio (`codio.com`) for this module.

- Trialled last year with Jan starters.
  - Improved outcomes.
- Changes to University procedure means need to make you aware...
  - Codio migrating servers to EU this year.
  - Data currently stored in USA.
  - Need to consent to use Codio.

Recap

- Sign up for Codio.
  - Or learn about alternate provisions.
- Learn how to use Codio.
  - Or alternate provisions.
- Algorithms introduction.

The End