122COM: Module information

David Croft

Coventry University

david.croft@coventry.ac.uk

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Overview

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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.

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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.

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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.

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Languages C

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.

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- Understand memory.
  - Pointers.
  - Stack and Heap.
- Understand data structures.
  - Stack.
  - Queue.
  - Array.
  - Vector.
- Understand testing.
  - Automated testing.

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Recap

Contact time   C

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.

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Recap

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

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The End

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