



Introduction to the Module

Dr Ian Cornelius



Hello

Hello (1)

- Welcome to **Programming and Algorithms 2**
- Module Team:
 - Dr Ian Cornelius, ab6459@coventry.ac.uk



About the Module

About the Module (1)

- Introduces some advanced concepts to programming
- Covers a wide selection of topics relating to programming
- Introduces a new programming language in the second half of the semester

About the Module (2)

Learning Outcomes

- On successful completion of this module, a student should be able to:
 1. Understand algorithm efficiency in order to select and implement the most appropriate for a given task
 2. Evaluate patterns and paradigms appropriate for specific tasks
 3. Develop secure software through the application of standards and secure programming principles
 4. Create software that requires multi-threading, inter-process communication, memory management and close interaction with the host operating system
 5. Develop software with a variety of user interfaces

About the Module (3)

Module Schedule i

Lectures

- Lectures will be an online video disseminated via Aula
 - released on the **Friday** before the week starts
- Each week a new topic will be introduced
 - discuss the topic
 - provide some code examples

About the Module (4)

Module Schedule ii

Labs

- Labs will be held weekly on:
 - Monday, 4pm to 6pm in BSB2-14
 - Wednesday, 9am to 11am in BSB2-14
- Each week a new lab activity will be released
 - you will be expected to participate and write code
 - support will be provided by lecturers
- You are expected to engage with the lecturers and support staff
 - be proactive and approach with a problem
 - come with an attempted solution, otherwise you may be pushed-back until you have tried something

About the Module (5)

Lecture Schedule

Week	Topic	Week	Topic
1	<ul style="list-style-type: none"> • Introduction to the Module • Recapping Python from Year 1 • Recursive Functions 	2	<ul style="list-style-type: none"> • Introduction to Computer Vision • Image Steganography
3	<ul style="list-style-type: none"> • Advanced Data Structures 	4	<ul style="list-style-type: none"> • Programming Paradigms • Threading in Python
5	<ul style="list-style-type: none"> • Graph Theory • Graph Traversal Algorithms 	6	<ul style="list-style-type: none"> • Networking in Python • RESTful Interfaces and APIs • Graphical User Interfaces in Python
7	<ul style="list-style-type: none"> • Introduction to C++ • Variables and Data Types in C++ • Operators in C++ 	8	<ul style="list-style-type: none"> • Advanced Data Types in C++ • Conditional and Control Statements
9	<ul style="list-style-type: none"> • Functions in C++ • Classes and Objects in C++ 	10	<ul style="list-style-type: none"> • TBC

About the Module (6)

- Delivered via two platforms:
 1. Aula
 2. GitHub Pages

Aula

- [5062CEM on Aula](#)
- Lectures and assessments
 - Content will be released on a weekly basis
- Submission links for coursework
- No Access?
 - Contact: cmd.reg.ees@coventry.ac.uk

GitHub Pages

- [5062CEM on GitHub Pages](#)
- Lectures, assessments and lab activities
 - Content will be released on a weekly basis
- Mobile friendly
- Considered to be the most *up-to date* version of the module



Module Assessment

Module Assessment (1)

- There are two components for this module:
 1. an individual piece of coursework
 2. another individual piece of coursework
- Both components will test you on the knowledge learnt during the course of the module

Module Assessment (2)

Coursework 1

- Learning Outcomes Assessed: 1 and 2
- Release Date: Semester 2, Week 1
- Submission Date: Semester 2, Week 6
- Weighting: 10 credits
- Submission via Aula using TurnItIn

Module Assessment (3)

Coursework 2

- Learning Outcomes Assessed: 3, 4 and 5
- Release Date: Semester 2, Week 6
- Submission Date: Semester 2, Week 12
- Weighting: 10 credits
- Submission via Aula using TurnItIn

Module Assessment (4)

Coursework Submission Guidelines

- You are required to submit a link to your **Coventry University Git Repository**
- The repository must be located in the **5062CEM** organisation
- Provide a copy of the source-code for the finished assessment in either one of the following formats:
 - Microsoft Word Document (**docx**)
 - Portable Document Framework (**pdf**)
- A submission example can be found at the following links:

[Microsoft Word Submission Example](#)

[PDF Submission Example](#)

- **These are important, and you must follow them very carefully.**
- **Failure to follow these guidelines will result in a marks being lost as outlined in the marking rubric.**



Support for the Module

Support for the Module

Digital Literacy Centre (DLC)

- Support sessions provided by the faculty
- Covers not just this module, but other modules and programming languages
- More information:

[DLC GitHub Page](#)

15-Minute Session with Module Leader

- Support sessions provided by the module leader
- Covers just this module and only Python
- Time-limited, first-come-first-served basis
 - module leaders time is shared amongst different modules and year groups

[Book a Session](#)



Goodbye

Goodbye (1)

Questions and Support

- Questions? Post them in the **Community Page** on Aula
- Additional Support? Visit the [Module Support Page](#)
- Contact Details:
 - Dr Ian Cornelius, ab6459@coventry.ac.uk