WM9A4-15 Digital Development with Python

23/24

Department
> WMG
Level
> Taught Postgraduate Level
Module leader
> Jordan Bruno
Credit value
> 15
Module duration
> 4 weeks
Assessment
> Multiple
Study locations
> University of Warwick main campus, Coventry Primary
> Distance or Online Delivery

Description

Introductory description

This module gives an introduction to computer programming and digital development for participants with little or no experience of computer programming. It introduces the key concepts found in almost all computer languages and enables participants to gain a practical understanding and be able apply them.

In particular, the module focuses on programming for the web, and the use of frameworks to produce professional web apps. In doing so, students will be introduced to many of the key elements of web apps, including databases, HTML/CSS and basic web server/cloud functionality.

Module aims

Through a combination of pre-work, lectures, demonstrations and practical workshops, participants develop their programming skills and gain an insight into the challenges of programming. The module concludes with the students specifying and developing an individual application and hosting it in a cloud environment using modern, cloud-native practices and the latest modern technologies

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Introduction to Programming

- Types of programming language
- Programming constructs
- Programming best practice

Introduction to Python

- Python fundamentals
- Python constructs
- Python best practices
- Flask

Web Application Development

- Databases
- HTML/CSS/Tempaltes
- Interactivity and JavaScript
- Functionality

Software development

- The SDLC
- Cloud environments
- Cloud native computing
- Web servers

Learning outcomes

By the end of the module, students should be able to:

- Develop comprehensive testing programs to validate specific functions.
- Develop appropriate and comprehensive documentation for a program or application.
- Critically evaluate software development lifecycle practices, and design conceptual and practical workflows.
- Critically analyse a range of problems and design structured applications that can meet them using in an appropriate computer language
- Evaluate and integrate a range of programming languages to develop interactive and professional web applications.

Interdisciplinary

A mixture of technology/computing topics and business topics

International

Topics are of high international demand

Subject specific skills

Programming, databases, website development, application development, cloud computing, IT architecture

Transferable skills

Programming, data analysis, team work, critical analysis, IT architecture

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Study

Study time

Type	Required
Lectures	20 sessions of 1 hour (13%)
Seminars	10 sessions of 1 hour (7%)
Practical classes	(0%)
Online learning (independent)	60 sessions of 1 hour (40%)
Assessment	60 hours (40%)
Total	150 hours

Private study description

No private study requirements defined for this module.

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Assessment group A1

	Weighting	Study time
Programming Test	20%	10 hours

	Weighting	**Study time**
Students write programming solutions to a range of problems		
Assignment	70%	45 hours
A high-level design of an application and example code to be used		
Code Repository	10%	5 hours
Creation of an online code repository based on in-class projects		

Assessment group R1

	Weighting	**Study time**
Assignment	100%	
A high-level design of an application and example code to be used		

Feedback on assessment

Verbal feedback for in-module element. Written feedback and annotated scripts for post-module element

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Availability

There is currently no information about the courses for which this module is core or optional.