WM9A4-15 Digital Development with Python

24/25

Department
WMG
Level
Taught Postgraduate Level
Module leader
Jordan Bruno
Credit value
15
Module duration
4 weeks
Assessment
100% coursework
Study locations
University of Warwick main campus, Coventry Primary
Distance or Online Delivery

Description

Introductory description

This module introduces computer programming and digital development to those with little or no programming experience. It covers essential concepts common to most computer languages and helps participants practically understand and apply them.

The module specifically targets web programming and using frameworks to create professional web apps. It covers important aspects of web apps, such as databases, HTML/CSS, and basic web server/cloud functions.

Module aims

Through pre-work, lectures, demonstrations, workshops and independant learning, participants improve their programming skills and learn about programming challenges. The module ends with students creating and hosting their own application in a cloud environment, using up-to-date, cloud-native methods and the latest 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:

- Analyse business needs and collaboratively design and pitch an innovative web application proposal, demonstrating project management and communication skills.
- Critically assess and combine various programming languages to develop interactive and professional web applications.
- Critically evaluate software development lifecycle methodologies and develop both theoretical and practical workflow models.
- Critically evaluate the impact of programming in business to develop innovative solutions for business challenges.
- Critically examine various issues and design structured applications in a suitable programming language to address them.

Indicative reading list

- Matthes, E. 2023, Python crash course: a hands-on, project-based introduction to programming, 3rd edn, No Starch Press, San Francisco, CA.
- Duckett, J. 2011, HTML & CSS: design and build websites, Wiley, Indianapolis, IN.
- Mayer, C. 2022, The art of clean code: best practices to eliminate complexity and simplify your life, No Starch Press, San Francisco.

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, software, development life cycle, cloud computing, IT architecture

Transferable skills

Programming, data analysis, problem solving, project management, communication skills, 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%)
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 A2

	Weighting	Study time	Eligible for self-certification
Assessment component			
Group Assessment	30%	18 hours	No
In this group assessment, students collaborate to craft and pitch comprehensive proposals for web applications, addressing hypothetical business scenarios. Through detailed research, planning, and strategic design, groups outline their proposed solutions, covering technology stacks, functionalities, and deployment strategies. This project evaluates students on creativity, analytical skills, teamwork, and their ability to present a compelling case for their innovative web solutions, without the necessity for actual coding.			
Reassessment component			
Individiual Assessment			Yes (extension)
In this individual assessment, the student crafts and pitches a comprehensive proposal for a web application, addressing hypothetical business scenarios. Through detailed research, planning, and strategic design, the student outline their proposed solutions, covering technology stacks, functionalities, and deployment strategies. This project evaluates the student on creativity, analytical skills, teamwork, and their ability to present a compelling case for their innovative web solutions, without the necessity for actual coding.			
Assessment component			
Assignment	70%	42 hours	Yes (extension)
In this assessment, students design an application and write code examples to solve a problem, showcasing their ability to use different programming languages and manage data effectively. They must write a report that explains how they will build the application, focusing on problem-solving, programming best practices, and the use of software development lifecycle methodologies.			
Reassessment component is the same			

Feedback on assessment

Verbal feedback for group assessment. Written feedback for individual assignment.

Availability

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