Prifysgol **Wrecsam**
Wrexham University

Module specification

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Module Code	COM665
Module Title	DevOps
Level	6
Credit value	20
Faculty	FACE
HECoS Code	100374
Cost Code	GACP

Programmes in which module to be offered

Programme title	Is the module core or option for this programme
BSc (Hons) Software Engineering	Core
BSc (Hons) Software Engineering with Industrial Placement	Core

Pre-requisites

N/A

Breakdown of module hours

Learning and teaching hours	12 hrs
Placement tutor support	0 hrs
Supervised learning e.g. practical classes, workshops	12 hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
Total active learning and teaching hours	**24** hrs
Placement / work based learning	0 hrs
Guided independent study	176 hrs
Module duration (total hours)	**200** hrs

For office use only	
Initial approval date	08/11/2023
With effect from date	Sept 2026
Date and details of revision	
Version number	1

Module aims

The module centres on DevOps, an approach that aims to bridge the gap between software development and IT operations. DevOps, short for "Development" and "Operations," is the focal point of this module, emphasizing its significance in modern software development practices. The module will explore the various stages of DevOps, which encompass the planning, coding, building, testing, deploying, operating, and monitoring phases. These stages will be examined in the context of developing a software product.

Module Learning Outcomes - at the end of this module, students will be able to:

1	Master the concepts and principles of DevOps, including its philosophy, practices and benefits.
2	Implement DevOps tools and technologies in line with current industrial best practices.
3	Demonstrate practical skills in setting up and managing DevOps environments.

Assessment

Indicative Assessment Tasks:

This section outlines the type of assessment task the student will be expected to complete as part of the module. More details will be made available in the relevant academic year module handbook.

The module will primarily focus on practical coursework, centred around developing a software product using the DevOps process. The coursework will involve various phases, including planning, coding, building, testing, deploying, operating, and monitoring. As an example, the software product could be a dynamic website built using the PHP scripting language, with a database backend managed by the MySQL database management system. Managing updates to the website, as well as operating and monitoring.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1, 2, 3	Coursework	100%

Derogations

None

Learning and Teaching Strategies

In line with the Active Learning Framework, this module will be blended digitally with both a VLE and online community. Content will be available for students to access synchronously

and asynchronously and may indicatively include first and third-party tutorials and videos, supporting files, online activities any additional content that supports their learning.

Indicative Syllabus Outline

Yearly content will be updated to represent the most appropriate content for current industry technologies, but a list of indicative topics could include:

- DevOps principles, culture
- Stack Development
- Continuous Integration
- Continuous Deployment
- Infrastructure as Code (IaC)
- Configuration Management
- Containerization and Orchestration
- Monitoring, Logging and Performance
- Security and Compliance in DevOps
- DevOps Toolchain and Ecosystem
- Case Study examples
- Best Practices

Indicative Bibliography:

Please note the essential reads and other indicative reading are subject to annual review and update.

Essential Reads

G. Kim, K. Behr & G. Spafford. *The Phoenix Project: A Novel About IT, DevOps, and Helping Your Business Win.* Trade Select. 2018.

Other indicative reading

M. Hering & B Ghosh. *Devops for the Modern Enterprise: Winning Practices to Transform Legacy It Organizations*, Trade Select. 2018.

D. Todaro. *The Epic Guide to Agile: More Business Value on a Predictable Schedule with Scrum*, R9 Publishing LLC. 2019.