








MODULE HANDBOOK 2025/26

Cloud Native Development

Module Code: COM682

Programme(s): BSc (Hons) Computer Science;
BSc (Hons) BEng CompScience;
BSc (Hons) Software Engineering;
BSc (Hons) PT;

School of Computing
Faculty of Computing, Engineering and the Built Environment

	Muhammad Shafi Module Coordinator	
	 Room Number	BB-02-10
	 Email	m.shafi@ulster.ac.uk
	 Phone Number	+44 28 9536 7344
	 Office Hours	Tuesday-Wednesday 9:30-13:30

Notice

Please be aware the information provided within the module handbook is subject to change.

Table of Contents

Welcome	3
1. Module Overview and Communication	4
2. Sustainable Development Goals (SDGs) and Graduate Attributes (GAs) in your module ...	5
3. Aim and Learning Outcomes.....	7
4. Assessment and Feedback.....	9
5. Learning Resources	18
6. Organisation and Management.....	20
7. Student Voice and Support Services	22

Welcome

Welcome

In today's rapidly evolving digital landscape, cloud-native technologies have become a cornerstone for modern application development. Businesses are leveraging the power of cloud platforms to build scalable, flexible, and resilient applications, fostering innovation and accelerating time to market.



Our focus in this module is to provide a holistic approach that integrates the principles of cloud computing, containerization, microservices architecture, DevOps, and continuous delivery. This has given rise to the interdisciplinary field of **Cloud Native Development**, where development and operations converge to create efficient, automated, and agile systems.

Throughout this module, we aim to build your skills in developing, deploying, and managing cloud-native applications. You will gain proficiency in designing scalable applications, optimizing cloud resources, and applying modern cloud technologies to address real-world challenges. Prepare to embark on a journey that will enhance your understanding of cloud-native practices and empower you to lead cloud-driven innovation. Welcome to the future of software development!

Kind regards,
Muhammad Shafi

Module Coordinator
September 2025

1. Module Overview and Communication

Module Details			
Module Title	Cloud Native Development		
Module Code	COM682	Module Level	6
Credit points	20	Module Status	Optional
Semester	1	Location	Campus
Delivery Mode	Blended		
Contact Details and Communication Methods			
Module Coordinator	Muhammad Shafi (See cover sheet for contact details)		
Teaching Staff Contact Details	Muhammad Shafi, m.shafi@ulster.ac.uk Patrick Corr, p.corr1@ulster.ac.uk Zeeshan Tariq, z.tariq@ulster.ac.uk		
 General Information, Queries and Consultations	<p>If you require advice on any aspect of the module, please read the guidance provided here, in the Module Handbook.</p> <p>For General Queries, please utilise the class Discussion Board. For Specific Queries or studies advice, you can avail of the ‘Virtual Office Hours.’ Please contact Muhammad Shafi if you have questions relating to the module or wish to schedule an appointment. Please note, we aim to respond to emails within 48 hours during the working week.</p>		
 Module Announcements	<p>Key announcements will be presented during tutor-led activities.</p> <p>Out of class communication including notifications, reminders, etc will be distributed via the Blackboard/Cloudcampus Announcement tool. You will receive a duplication of the announcement direct to your student email inbox. It is essential that you check your emails regularly.</p> <p>It also advisable that you download the ‘Blackboard’ App as an alternative to access these announcements, notifications, and reminders as well as content.</p>		

2. Sustainable Development Goals (SDGs) and Graduate Attributes (GAs) in your module

Sustainable Development Goals (SDGs)

The UN SDGs are a comprehensive set of global goals to end poverty, protect our planet, and improve living conditions of the Global Population. You are encouraged to think critically and reflect on SDGs in the context of this module.

The following SDGs are relevant in the context of this module:

 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>
 <input type="checkbox"/>	 <input checked="" type="checkbox"/>	 <input checked="" type="checkbox"/>	 <input type="checkbox"/>	 <input checked="" type="checkbox"/>	 <input checked="" type="checkbox"/>
 <input checked="" type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	

Graduate Attributes (GAs)



Ulster University's [Graduate Attributes](https://ulster.ac.uk/graduateattributes) are a high-level set of competencies, developing universal understandings, skills, qualities, and values.

As a result of engaging with this module you will have opportunities to develop and practise the following selected attributes:

Thriving Individual	D	A
Enhancing Potential	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Confidence and Resilience	<input type="checkbox"/>	<input type="checkbox"/>
Well-being	<input type="checkbox"/>	<input type="checkbox"/>
Growth Mindset	<input type="checkbox"/>	<input type="checkbox"/>

Engaged Learner	D	A
Subject Specialist	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Creative Problem Solver	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Researcher	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Critical Thinker	<input type="checkbox"/>	<input type="checkbox"/>

Collaborative Professional	D	A
Responsible Team Player	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Effective Communicator	<input type="checkbox"/>	<input type="checkbox"/>
Enterprising Innovator	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Digital Fluent Professional	<input type="checkbox"/>	<input type="checkbox"/>

Active Citizen	D	A
Citizen with Integrity	<input type="checkbox"/>	<input type="checkbox"/>
Inclusive Citizen	<input type="checkbox"/>	<input type="checkbox"/>
Sustainable Citizen	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Future Thinker	<input type="checkbox"/>	<input checked="" type="checkbox"/>

KEY:

D = Developed

A = Assessed

3. Aim and Learning Outcomes



Module Rationale

Contemporary software development and deployment practices have evolved from traditional ones, relying on a variety of novel technologies and concepts. Traditional server infrastructure is supplanted by services offered by dynamic hosting provided by cloud providers such as Amazon Web Services, Google Cloud Platform and Microsoft Azure.

Typical services offered are extensive and archetypally include comprehensive functionality including:

- serverless execution models
- compute services
- hosted database instances
- block/object storage
- data lakes
- static web hosting
- Application Program Interface endpoint hosting
- security services and identity management
- dynamic content routing
- machine learning and artificial intelligence services
- caching of content and computed outcomes

In addition to technical aspects of such modern solutions, there is an impact on the administrative, operational and accounting practices when compared with traditional development and deployment solutions. Through these services, solutions built upon them may react, shrink and grow at scale and on demand whilst reducing overhead and costs. These modern operational practices have shown to increase solution quality with a greater responsiveness to customer needs. This module serves as an introduction to these cloud platforms, related theory, their foundational concepts and operation models.

Overall Aim of the Module

This module aims to:

- Provide an introduction to contemporary cloud development environments their
- concepts, commands, management and operation.
- Provide an understanding of the challenges associated with modern operational
- practices. Introducing architectural considerations, pricing and deployment models.

- Provide students with practical and theoretical experience of the scalable, cloud-based, architectures offered by solutions providers such as OpenStack, Amazon Web Services and Azure.
- Provide students with experience of Platform as a Service (PaaS) and Infrastructure as a Service (IaaS) concepts

Learning Outcomes

What you should be able to do by the end of this module?

Successful participants will be able to:

1	Assess the concepts behind a range of cloud native development techniques and critically evaluate when to apply these paradigms to realisation of solutions.
2	Demonstrate a comprehensive understanding of modern cloud development, techniques and practice and how it may be leveraged to address related challenges.
3	Appraise administrative aspects related to cloud native development, such as pricing concerns and access control.
4	Autonomously and independently identify deficiencies when interacting with a range of architectures and deployment paradigms, leveraging knowledge of these deficiencies to improve future practice.

4. Assessment and Feedback

What you need to do to demonstrate achievement of learning?

Summary Assessment Information

This module will be assessed via two items of assessment

Type / Element	Assessment method Submission date, time and submission method	Percentage (%) and word count equivalent	Feedback due date
Coursework 1	CW1 - Project Design Submission Due: 10 th November 2025 Feedback: 5 th December 2025	50%	20 working days post submission date (via Blackboard Ultra)
Coursework 2	CW2 - Project Implementation & Video Cast Due: Monday 9 th January 2026 Feedback: 30 th Jan 2026	50%	20 working days post submission date (via Blackboard Ultra)

Assessment Guidance

- 1) Word count includes the title page, contents page, in-text references and citations but excludes tables, reference list and appendices.
- 2) Your work should include references to relevant journal articles and other good quality information sources and should be properly laid out using the Harvard system of referencing. More detailed guidance is available in the [Subject Guides](#). We encourage you to make good use of all the support services offered by your [Campus Librarian](#), further details are in the Learning Support Services Section.
- 3) You should refer to the assessment criteria to provide fuller details of the marking criteria for each classification band.
- 4) In addition, you should refer to the standard assessment guidelines as presented in your Course Handbook/Support Area, this includes guidance and policies on referencing style, plagiarism, etc.
- 5) We recommend the use of [Studiosity](#) which offers constructive feedback on draft written submissions within 24 hrs.
- 6) **Coursework must be submitted by the dates specified.** Coursework submitted after the deadline, without prior approval, is not normally accepted. For further guidance on the late submission of coursework, please see the course handbook.
- 7) Assessments must be submitted as per the assessment brief.

The university has rules and regulations surrounding assessment, late submissions, and illness. These are in the student guide [1] - ensure you read this and understand the impact of these rules and regulations.

This module is assessed by two pieces of coursework.

1. Written Assignment (worth 50%) submitted mid-semester. Students will individually design a cloud-native solution in the form of a web app.
2. Project (worth 50%) submitted at the end of the semester. Implement, deploy, and test the solution designed in CW1. This should be implemented and deployed using the Microsoft Azure cloud platform taught and used within the practical exercises associated with this module.

These coursework assignments are detailed below.

Coursework 1 [50%]

Assessment Task



Coursework 1 – BRIEF

Students will individually design a cloud-native solution in the form of a web app. The designed solution should leverage a range of cloud-native technologies and concepts as taught within the module and module materials.

Released: Week-1

Submission Deadline: Week-8

Feedback Date: Within 20 working days as per university guidelines

Solution Designing:

Design a scalable, cloud native, web-application which acts as a **multimedia sharing platform** facilitating sharing of multimedia content. The exact media type(s) which can share (from what's covered in the labs) are at the discretion of the student. The ability to share multiple content types is encouraged.

The **designed** solution should leverage a range of cloud native technologies and concepts as taught within the module and module materials. You may choose to design a **serverless architecture using Azure Functions** as the core compute instead of VMs/App Service.

Your design should include the following, but not limited to:

- Design a multimedia hosting webpage as a Cloud service where the user can upload multimedia files.
- You should choose to create page wireframes. Present this in the form of website design layout diagram. (Covered during week-5 lecture)
- Design an architecture of your solution consisting of VMs, DBs, Web servers, etc. Architecture is to be presented in the form of network diagrams, as mentioned during Week-4 lecture.
- Design a Database schema to store the user entries. You need to present it in the form of list of DB resources. You should also present in the form of ERD diagram. Non-relational databases may be modelled as commented JSON or a table as shown in week 3.
- Design the REST API to support the creation, retrieval, updating, and deletion of various asset records using the Logic Apps. This design needs to be presented in the form of UML diagram, as mentioned during Week-5 lecture.

Ideally, your designed solution would integrate the following, but not limited to:

- Static HTML hosting of the content of a web page that interacts with a web backed through REST calls hosted at App Services, covered in lab 5.
- Hosting of REST endpoints (URIs) which provides service logic and connections to all necessary elements such as storage.
- Use of Databases for hosting SQL and NoSQL structures.

Note: Marks for design or UX are only covered in the Rubric section 'Overview of the designed technical solution'.

Submission:

Students will submit a slide deck which details the designed solution (details below).

Students must follow the below **content outline** for slides:

- Title Slide: Project name, one line description. Student name, student number.
- Discussion of the technical problem and identification of the issues related to scalability for the resources used in your project. Note, this is not a description of the objective of the project, instead it is an appraisal of the technical issues which may affect traditional solutions and how cloud based systems address these.
- Solution architecture of the project (Only use resources taught in the module)
- An overview of advanced features that you intend to develop in the final solution. Note these are use of advanced platform features, not additional buttons etc.
- An assessment of the limitations of the solution
- Assessment of Scalability of your designed solution
- Concluding comments, such as how this solution can be improved, what are design limitations which can be improved? How solution can be useful for commercial purpose? Is there any ethical comments?
- References
- Submission Checklist: Appendix III.
Please submit this checklist at the end of the PowerPoint slide deck. Checklist slide will not be counted in the 15 slides limit.

Slides should be produced in the **PowerPoint format** and will need to be uploaded to the relevant assessment area on Blackboard. Your presentation should not exceed more than 15 slides. Slide notes and slides after slide 15, will not be assessed.

Coursework 2 [50%]

Assessment Task



Coursework 2 – BRIEF

Students will individually implement, deploy, and test the solution designed in CW1. This should be implemented and deployed using the Microsoft Azure cloud platform taught and used within the practical exercises associated with this module.

Released: Week-1

Submission Deadline: Week-14

Feedback Date: Within 20 working days as per university guidelines

Implementation of design:

Implement, deploy, and test the solution designed in CW1. This should be implemented and deployed using the Microsoft Azure cloud platform taught and used within the practical exercises associated with this module.

The **developed** solution should leverage a range of cloud native technologies and concepts as taught within the module and module materials. These include the following, but not limited to:

- Implement the solution based on the design produced in Part-1
- Use scalable cloud native storage for storing binary blob data, such as files
- Leverage a cloud native NoSQL database to store metadata
- Design the REST API to support the creation, retrieval, updating, and deletion of various asset records using the Logic Apps
- Create endpoint URIs that will store images and metadata.
- Implement CI/CD using GiT.
- Add advanced services, such as Azure App Monitor, App Insights, etc that are covered in labs.

Submission:

Each student will individually submit 5 mins video of the built solution:

- A video where the student provides 5-minute maximum walk-through of the developed, tested and deployed solution.
 - This video should be used to showcase the functionality of the solution and show its deployment to Azure.
 - You should present all of the used Azure resources.
 - Do not run through slides of Part-1 during the video.
 - If there is no certain excuse, the video should include you (turn camera on, if possible).
- You should present following, but not limited to:
 - Your running application, where you would perform CRUD operation using RESTful APIs. Uploading, editing, and deleting functions should be working to get maximum marks. You will still get marks if the solution is partially completed.
 - Your backend Azure resources, logic apps, functions, DB, CI/CD functionality.
 - URIs referring to the Azure resources which are used for CRUD.
 - Clearly mention which advanced features you have used, and show their working. Also mention if solution has no advanced features added.
- Please use **Panopto Capture** to record your video screencast - accessed by clicking the '**Panopto**' link from the menu on the left of the Blackboard site. While **Panopto Capture** is preferred, several free tools are available to support the dual recording feature – computer screen and presenter - (e.g., <https://screencast-o-matic.com/>).
- Please refer to the University's Panopto support pages for information on Using Panopto Capture and Submitting to a Panopto Student Video Assignment.

Time Penalties: These deductions are from rubric section 'Video Quality and Presentation'

Within 5 mins – No penalty

> 30sec and < 1min – 10% deduction

>1min and above – 20% deduction

Coursework 1 – ASSESSMENT RUBRIC/MARKING PROFORMA

Appendix I – assessment criteria coursework 1

	0%-39% (Fail)	40%-49% (3rd)	50%-59% (2.2)	60%-69% (2.1)	70%-79% (1st)	80%-100% (High 1st)	Total CW1
	Poor, Insufficient, Incorrect	Basic, Weak, Flawed	Limited, Inconsistent, Unmanaged	Good, Consistent, Controlled	Excellent, Comprehensive, Reflective	Outstanding, Insightful, Professional	
Problem Definition and Discussion	Little description of the overall problem was provided; poor justification of why a cloud model needs to be adopted.	There was insufficient explanation of the issue, as well as inadequate justification for why a cloud-based model should be implemented.	Moderate description of the overall problem was provided, adequate justification presented of why a cloud solution needs to be developed.	A sufficient amount of justification was provided as to why a cloud-based solution needs to be developed, and a good description of the problem as a whole was provided.	Good description of the overall problem with a good justification of why a cloud solution needs to be developed.	Excellent description of the issue as a whole, along with a full and comprehensive justification of why a solution based on the cloud ought to be developed.	20%
	Limited critical appraisal of the use of cloud technologies.	A constrained and selective analysis of the use of cloud computing technologies.	Adequate critical appraisal of the use of cloud technologies and related patterns.	Appropriate and critical evaluation of how cloud technologies and related patterns are being used in the solution.	Strong critical appraisal of the use of cloud technologies, related patterns, and architectural components.	An in-depth analysis and evaluation of how cloud computing, associated patterns, and architectural components are being used.	
Overview of the designed technical solution	No justification for the choice of technology applied.	Justification for the choice of technology applied to the problem was minimal.	The technology used to produce the solution was appropriate given the development problem.	Given the development issue, the technology used to produce the solution was appropriate, and sufficient details were provided.	The technology used to produce the solution was carefully examined and logically chosen – given the development problem.	The technology that was used to produce the answer was thoroughly investigated, analysed, and selected in a logical manner, along with the reasoning behind the selection.	40%
	No design presented	Design was poorly informed and did not incorporate many clouds native elements. No wireframes were produced	Moderate effort was made to incorporate cloud native components. The design was satisfactorily informed by cloud native design patterns.	Cloud native components were incorporated with an appropriate amount of effort. Cloud native design patterns successfully informed the design.	Alternative technologies were examined and excluded accordingly. A wide range of cloud native components were incorporated into the solution.	Alternative technologies were investigated, detailed with pro and cons. The solution included a wide range of cloud native components with architecture diagram.	

	No meaningful solution architecture was presented.	A moderate solution architecture was presented.	An architectural diagram of the developed solution was presented. Wireframes were produced	An architectural diagram of the developed solution was presented with detailed cloud components. Wireframes were produced	The solution architecture was documented well incorporating control flows and software architecture diagrams. The design of the solution was considered and justified through cloud native design patterns. Wireframes were produced	Insights for selection of the solution and its advantages over other cloud-based solutions available in the literature. Wireframes were produced	
Assessment of Limitations	The limitations of the solution were not enumerated nor discussed adequately.	The limitations of the solution were discussed without any reflection	Some limitations of the solution were discussed with some awareness of how to remedy these presented.	"-3 limitations of the solution were discussed with some awareness of how to remedy these presented.	A broad appraisal of the limitations of the solution were presented. Strategies to address these were presented.	A comprehensive analysis of the constraints imposed by the solution was provided here. Presented here are some potential solutions to these problems.	15%
Assessment of Scalability	The solution integrates no elements to offer scalable operation.	The solution minimally integrated elements to offer scalable operation.	Scalability was partially catered for in the solution.	Scalability was catered for most of the resources in the solution.	Scalability was well catered for with multiple cloud native elements applied to achieve this.	Scalability was effectively addressed by employing a number of cloud-native components throughout the development process.	15%
Concluding comments	No reflection was applied to the solution, its functionality, limitations and potential applicability.	The proposed solution, its functionality, its limitations, and its potential applicability were all given some reflections	Meaningful reflection was applied to the solution, its functionality, limitations, and potential applicability.	Variety of meaningful reflection was applied to the solution, its functionality, limitations, and potential applicability.	Insightful reflection was applied to the solution, its functionality, limitations and potential applicability. Weaknesses were identified and improvements were suggested.	The solution, its functionality, its limitations, and its potential applicability were all given careful consideration in this in-depth analysis. It was determined what the problems were, and some potential solutions were proposed.	5%
Referencing	No referencing.	Inadequate or incorrect referencing.	Only few references provide which doesn't relate to the solution	Relatable references provided	Correct and appropriate referencing.	Correct and appropriate referencing and within document citation.	5%

Appendix II – assessment criteria coursework 2

	<i>0%-39% (Fail)</i>	<i>40%-49% (3rd)</i>	<i>50%-59% (2.2)</i>	<i>60%-69% (2.1)</i>	<i>70%-79% (1st)</i>	<i>80%-100% (High 1st)</i>	<i>Total CW2</i>
	<i>Poor, Insufficient, Incorrect</i>	<i>Basic, Weak, Flawed</i>	<i>Limited, Inconsistent, Unmanaged</i>	<i>Good, Consistent, Controlled</i>	<i>Excellent, Comprehensive, Reflective</i>	<i>Outstanding, Insightful, Professional</i>	
Implementation	Incomplete or incorrect implementation. Key components are missing, non-functional, or improperly deployed.	Basic implementation with significant issues or missing components.	Adequate implementation with most components functional, though minor errors may exist.	Comprehensive implementation with all major components functional and well-integrated.	Detailed and highly effective implementation with all components seamlessly integrated and functional.	Exceptional and innovative implementation with all components expertly integrated and functional.	35%
Use of Azure Resources	Poor or incorrect use of Azure resources. Key services are missing or non-functional.	Some Azure resources used, but implementation is flawed or incomplete.	Adequate use of Azure resources with most components correctly deployed and functional.	Effective use of Azure resources with all components correctly deployed and well-integrated.	Excellent use of Azure resources with all components flawlessly deployed and integrated.	Masterful use of Azure resources with flawless deployment and integration.	35%
Use of Advanced Features	Little to no attempt to integrate advanced features. Features are non-functional or incorrectly implemented.	Minimal integration of advanced features, with limited functionality.	Some integration of advanced features, with basic functionality.	Effective integration of advanced features with good functionality.	Advanced features are expertly integrated and fully functional, significantly enhancing the solution.	Advanced features integrated at an expert level, adding significant value.	20%

Video Quality and Presentation	Poorly structured video, unclear, lacks key elements. May not appear in video.	Somewhat clear video but may be poorly structured or lack essential content.	Clear video that presents the solution adequately but may lack depth.	Well-structured and clear video, presenting the solution effectively.	Highly professional video, clearly structured, within the time limit.	Exemplary video with clear, well-structured presentation, highly professional.	10%
---------------------------------------	--	--	---	---	---	--	-----

5. Learning Resources

i A list of current learning resources specifically chosen to build your knowledge and understanding for this module

Reading List

globe Also available online via Key Links: <https://ulster.keylinks.org/#/>

Books/Journal Article/Publications Required Reading (Must read)

Microsoft Corporation, (2017) Cloud Application Architecture Guide, Microsoft press. Seattle.
Link: [EN-CNTNT-Whitepaper-CloudApplicationArchitectureGuide.pdf \(microsoft.com\)](#)

Books/Journal Article/Publications Recommended Reading (Should read/Could read)

Caldato, C., (2020) Cloud Native for the Enterprise, O'Reilly Media, Inc. Sebastopol.

Gilbert, J., (2018) Cloud Native Development Patterns and Best Practices: Practical architectural patterns for building modern, distributed cloud-native systems, Packt Publishing. Birmingham.

Murphy, N., Beyer, B., Jones, C., Petoff, J., (2016) Site Reliability Engineering: How Google Runs Production Systems, O'Reilly Media, Inc. Sebastopol.

Useful Journals

Useful Library Databases and Websites



Library's Support Services

In collaboration with teaching staff, your [Campus Librarian](#) will be delivering timetabled workshops to ensure you are able to make the best use of the [Library's services and information resources](#) in successfully completing your coursework. Furthermore, if you need specific help with an assignment

or dissertation then you can make an appointment to meet with your Subject Librarian by email, phone or through using the [appointments schedule](#).

Online support is also available by accessing the Library's [Guides](#) as these provide help in developing your information and research skills by identifying the best learning resources available, forming effective literature searches, offering academic writing support and adopting the best referencing techniques.

Blackboard Learning Support

If you require help or support with any of the digital learning tools utilised within your module, please contact The Blackboard Helpdesk via:

 028 9536 7188, or by  e-mail to blackboardhelpdesk@ulster.ac.uk

6. Organisation and Management

Types of learning activities that will make up your weekly timetable



COM682 Cloud Native Development, is a 20-credit point module, this requires approximately 188 hours of your commitment, distributed through the following learning and teaching activities over the 15-week semester. For a description of the nature of the learning activities please refer to your course handbook.

Summary of Learning Activities

Learning Activities: Week 1-12	Indicative Weekly Hours	Total Hours (200 hours)
Lecture and Class Activities	2 hours	24
Practical Activities in Lab environment	2 hour	24
Independent Study: Week 1-15	Indicative Guide	
Independent Study	11 hours	140

The teaching and learning plan provides a more detailed overview of content on a weekly basis.

Module delivery will typically consist of a two-hour lecture and a one-hour Seminar although format may vary slightly between weeks/sessions.

 For the day, time and room number view your [Timetable](#) via [PUBLISH](#).

Seminars – please refer to the teaching and learning plan below for the seminar topic. **Attendance at seminars is most important and therefore will be monitored.** All students should download the SEAtS Student Attendance App to their smartphones. Regularly checking into class using the app helps you keep track of your attendance and ensures you stay on track with your studies. Please view the [university attendance](#) website for more information including user guides, video demonstrations, and FAQs.

Teaching and Learning Plan

The teaching plan/order of weekly topics is subject to change. The list below provides an outline summary of weekly activities and further information is available on BBL in the relevant week's folder.

Students will be expected to engage in all prescribed activities that contribute towards final assessment.

Week/L&T Methods	Lecture Topic	Lab Topic
Week-1	Module Intro & history	Lab-01- Creation of Azure Accounts
Week-2	Cloud Computing Concepts & features overview	Lab-02-Azure SQL
Week-3	No Sql and Document Databases Hosted Relational databases	Lab-03_Cosmos DB
Week-4	Cloud Design Patterns and Architecture I & II	Lab-04 Azure Storage Services
Week-5	Hosted Web Endpoints (REST) Azure Data storage Platforms	Lab-05 API_REST
Week-6	Decomposing a Cloud: Virtualization, Containerization and Serverless Execution	Lab-06- Designing Storage Databases and Creating RE
Week-7	Caching, Content Delivery Network Serverless Computing on Azure	Lab-07-Creation of Function, Persolised Funtion, and
Week-8	Azure Networking, Azure DNS, and Routing Load Balancing and Scalability	Lab-08-Creation of Logic apps and Endpoint
Week-9	Azure Monitor & Azure Application Insights Profiler	Lab-09-Dynamic App for Lab-08 and Lab-06
Week-10	Open Source Licenses, CI/CD	Lab-10-Application Insights, QnA maker, face service
Week-11	Advanced Azure Services –Cognition I	Lab-11-CI/CD Pipline
Week-12	Advanced Azure Services –Cognition II	Lab-12-Virtual Networks

7. Student Voice and Support Services

How we support you



As a course team, we incorporate the key partnership principles set out in the joint UU & Ulster University Students' Union [Student Voice Guidelines](#) and proactively engage with the democratic election of UUSU academic student reps (Faculty Reps, School/Dept Reps & Course Reps) to ensure that student opinion is heard at Ulster. We respect your views and welcome your honest and constructive feedback on the module.

There are several ways to do this:

You can contact your Module Coordinator about any queries related to your learning experiences on the module as/when you have them.

You can voice your opinions through the formal Staff/Student Consultative Committee process by contacting one of the elected [UUSU Course Reps in your class](#).

You will have the opportunity to give feedback on the module through completing the online Student Module Feedback Survey.

UUSU Advice Bureau Service

If you are experiencing difficulties that are impacting your studies, you can contact the Advice Bureau in the Students' Union (UUSU). You can get advice and guidance on issues such as - complaints, appeals, housing problems, disciplinarys, and info on various support providers available. To have a chat with the team, [contact UUSU online](#).

UU Student Wellbeing Service

Ulster University's Student Wellbeing team is available to help you manage common pressures many students experience while studying in higher education. Common pressures include stress, relationship issues, financial problems, and managing disability-related challenges, including mental health difficulties. There is no stigma to seeking support to maximise your wellbeing and achievement at UU.

Student Wellbeing support is free and confidential and is located on each of our campuses. Please view the Student Wellbeing pages for details on how to [contact student wellbeing](#) staff.

Other [external helplines](#) are also available.

UU Student Success Team

Ulster University's Student Success team has developed a series of academic and study skills training resources and workshops to help you succeed educationally and develop personally and professionally. You can access these resources via the [Student Success website](#) or you can contact the team directly via [email](#).