

**MODULE SPECIFICATION**

<b>Name of Module</b>		Cloud Computing					
<b>Parent School/Dept</b>		<b>Computer Science</b>					
<b>Programme(s) where module is offered</b>		BSc Computer Science with Electrical Engineering; BSc Computer Science with Economics; BSc Computer Science with Business; BSc Computer Science with International Relations; BSc Computer Science with Political Science;					
<b>Status</b> (core, option, free choice)		Core		<b>Pre-Requisite Modules or Qualifications</b>		Introduction to Computer Systems, Database systems; Networks and Telecommunications; Software Engineering	
<b>FHEQ Level</b>	5	<b>Unit Value</b>	6 ECTS	<b>Module Code</b>	CS260	<b>Module coordinator</b>	Amer Celjo
<b>Semester taught</b>		Spring		<b>Applicable From</b>		2019	

**Educational Aims of the Module**

The overall aim of this module is to introduce students to the fundamental concepts and principles of cloud computing. Students will be introduced to a different cloud application (SaaS) and will be able to use modules of these applications in order to complete business processes. In this way students will be introduced to real life application usage and implementation as well as business information systems requirements for integration through the cloud settings.

**Module Outline/Syllabus**

- **Cloud Computing Introduction:** In this part different architecture characteristics of cloud computing will be discussed as well as cloud services models (IaaS, PaaS, SaaS). Example of applications for each model will be presented.
- **Cloud Applications:** This part focuses on real life configuration and usage of business cloud applications (ex; enterprise systems, storage applications). Focus is on the ability to understand and configure business process needs through cloud application.
- **Network Security:** This part will present typical security issues and possible scenarios for cyber-attacks on cloud platforms.
- **Management/Business View of Implementation:** This part will present and different implementation strategies for companies that decide to implement or move towards cloud platforms to perform their business processes. Types of different software implementations and implementation stages are covered, both from technical and business prospective.

**Student Engagement Hours**

Type	Number per Term	Duration	Total Time
Lectures	30	2 hours	60 hours
Laboratory sessions	15	2 hours	30 hours
Total Contact Hours			<b>90 hours</b>
<b>Total Engagement with Independent Guided hours</b>			<b>150</b>

**Assessment Method Summary**

Type	Number Required	Duration / Length	Weighting	Timing/Submission Deadline
Mid-term	1	90 minutes	20%	Weeks 7,8,9
Project	1	2,000 words	15%	Semester-long
Lab Assignments (Technical or case study)	3	90 minutes	15%	6,10,14
Final Exam	1	180 minutes	50%	End of semester

<b>Module Outcomes</b>		
<p><b><u>Intended Learning Outcomes:</u></b></p> <p>At the end of the Course, students should be able to gain:</p> <ol style="list-style-type: none"> <li>1) Differentiate from different cloud types and infrastructure characteristics.</li> <li>2) Understand the process for developing and using cloud applications</li> <li>3) Use cloud applications in order to complete business processes.</li> <li>4) Understand management issues and be able to make business decisions for implementation of software as a service applications.</li> </ol>	→	<p><b><u>Teaching and Learning Strategy:</u></b></p> <ol style="list-style-type: none"> <li>1. Lectures on module material.</li> <li>2. Practical demonstration of cloud applications</li> <li>3. Laboratory sessions with appropriate tools and practical problems and exercises.</li> <li>4. Group projects enabling students to develop communication and research skills and apply what they have learnt in the module to a practical problem.</li> </ol>
	→	<p><b><u>Assessment Strategy</u></b></p> <ol style="list-style-type: none"> <li>1. Test (ILO:1-3)</li> <li>2. Mid-term exam (ILO:1-3)</li> <li>3. Final exam (ILO:1-5)</li> <li>4. Lab assignment (ILO:4,5)</li> <li>5. Project (ILO:1-5)</li> </ol>
<p><b><u>Practical Skills</u></b></p> <ol style="list-style-type: none"> <li>1. Ability to develop web applications and use it in cloud settings.</li> <li>2. Ability to configure enterprise systems and use it.</li> <li>3. Ability to analyse business processes and make decision on its implementation.</li> </ol>	→	<p><b><u>Teaching and Learning Strategy:</u></b></p> <ol style="list-style-type: none"> <li>1. Lectures on module material.</li> <li>2. Practical demonstrations.</li> <li>3. Laboratory sessions</li> </ol>
	→	<p><b><u>Assessment Strategy</u></b></p> <ol style="list-style-type: none"> <li>1. Lab assignment (ILO:3)</li> <li>2. Project (ILO:1-3)</li> </ol>
<p><b><u>Transferable Skills</u></b></p> <ol style="list-style-type: none"> <li>1. Communication skills</li> <li>2. Presentation skills</li> <li>3. Technical skills: ability to install, configure and use cloud applications</li> <li>4. Team work: ability to collaborate and solve problems in team projects.</li> <li>5. Ability to research and analyse different cloud technologies and write literature review about findings.</li> </ol>	→	<p><b><u>Teaching and Learning Strategy:</u></b></p> <ol style="list-style-type: none"> <li>1. In-class communication</li> <li>2. Reading and exercises during laboratory sessions</li> <li>3. Reading and in class practice</li> <li>4. Participation in group project</li> </ol>
	→	<p><b><u>Assessment Strategy</u></b></p> <ol style="list-style-type: none"> <li>1. Mid-term exam (ILO:4)</li> <li>2. Final exam (ILO:4)</li> <li>3. Lab assignment (ILO:2-4)</li> <li>4. Project (ILO:1-4)</li> </ol>

#### **Key Texts in consideration / or other learning materials**

**Set Text**

- Erl, T., Puttini, R., & Mahmood, Z. (2013). *Cloud computing: concepts, technology & architecture*. Pearson Education.
- Rittinghouse, J. W., & Ransome, J. F. (2016). *Cloud computing: implementation, management, and security*. CRC press.
- Ahson, S. A., & Ilyas, M. (Eds.). (2010). *Cloud computing and software services: theory and techniques*. CRC Press.
- Mahmood, Z., & Hill, R. (Eds.). (2011). *Cloud Computing for enterprise architectures*. Springer Science & Business Media.
- Mahmood, Z. (Ed.). (2013). *Cloud computing: Methods and practical approaches*. Springer Science & Business Media.
- Chorafas, D. N. (2010). *Cloud computing strategies*. CRC press.

- Rittinghouse, J. W., & Ransome, J. F. (2016). Cloud computing: implementation, management, and security. CRC press.

### Supplementary Materials

- Furht, B., & Escalante, A. (2010). Handbook of cloud computing (Vol. 3). New York: Springer.
- Menken, I. (2008). Cloud Computing-The Complete Cornerstone Guide to Cloud Computing Best Practices Concepts, Terms, and Techniques for Successfully Planning, Implementing... Enterprise IT Cloud Computing Technology. Emereo Pty Ltd.
- Integrated Business Processes with ERP systems Simha Magal and Jeffrey Word, 2011

**Please note:** This specification provides a concise summary of the main features of the module and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each module and programme can be found in the departmental or programme handbook. The accuracy of the information contained in this document is reviewed annually by the University of Buckingham and may be checked by the Quality Assurance Agency.

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