

Course name: CENG4XX Cloud Computing		Department: Computer Engineering						
Semester	Methods of Education							Credit (ECTS)
	Lecture	Recitation/ (Etud)	Lab	Project/ Field Study	Homework	Other	Total	
2021 – 2022 Fall	45	35	-	20	60	10	170	6
Language	English							
Compulsory/Elective	E							
Prerequisites	-							
Face to Face Lecture	1.5							
Online	1.5							
Course Contents	<p>Week 1 – Introduction to Cloud Computing</p> <p>Week 2 – Cloud deployment and service models; What is AWS?</p> <p>Week 3 – Hadoop Eco System: HDFS, Apache Yarn, etc.</p> <p>Week 4 – Hadoop MapReduce</p> <p>Week 5 – Apache Spark</p> <p>Week 6 – Spark SQL And Spark Stream processing</p> <p>Week 7 – Spark Mlib And Spark GraphX</p> <p>Week 8 – Data Storage Systems</p> <p>Week 9 – AWS global infrastructure</p> <p>Week 10 – Virtualization in the cloud; Amazon Virtual Privat Cloud</p> <p>Week 11 – Elastic Load balancing and Auto Scaling</p> <p>Week 12 – Setting up wordpress blogging infrastructure on AWS</p> <p>Week 13 – Automating deployment in AWS</p> <p>Week 14 – Amazon CloudFront</p> <p>Week 15 – Comparative study of various cloud service providers and their offerings</p>							
Course Objectives	<p>The purpose of this course is</p> <ul style="list-style-type: none"> to equip students with the core cloud computing concepts, tools and software stacks so that they can develop high performance scalable and secure solutions using the cloud. To develop research and development skills in students so that they can appreciate and contribute to the state of the art. 							
Learning Outcomes and Competences	<ol style="list-style-type: none"> Understand core distributed systems concepts underlying cloud computing Understand cloud service models Understand storage, networking and computing in the cloud. Gain hands-on experience with a public cloud service (Amazon EC2, S3 and EBS), utilize it to lease and provision compute and storage resources Use these concepts to analyze, design and implement new cloud computing systems Write new cloud applications. Develop critical thinking, communication skills and collaborative problem-solving skills. 							
Textbook and /or References	<ol style="list-style-type: none"> Jothy Rosenberg and Arthur Mateos, "The Cloud at Your Service", First Edition, Manning Publications. Michael Wittig, Andreas Wittig, "Amazon Web Services in Action", Second Edition, Manning. Jurg van Vilet and Flavia Paganelli, "Programming Amazon EC2", O'Reilly Media. 							
Assessment Criteria							%	
	Midterm						30	
	Quiz						15	
	Homework						20	
Final						35		
Instructors	Shafqat Ur REHMAN							