SLIIT COMPUTING | BUSINESS | ENGINEERING	**DEPARTMENT OF COMPUTER SCIENCE & SOFTWARE ENGINEERING**		
	FACULTY OF COMPUTING		
MODULE OUTLINE			
Module Name	**Current Trends in Software Engineering**		
Module Code	SE4010	**Version No.**	2024-1
Year/Level	4	**Semester**	1
Credit Points	04 Credits		
Pre-requisites	None		
Co-requisites	None		
Methods of Delivery	**Lectures**	02 Hours/Week	
	Tutorials	01 Hour/Week	
	Laboratories	02 Hours/Week	
Course web site	http://courseweb.sliit.lk		
Date of Original Approval	January , 2017		
Date of Last Approval	January, 2024		
Date of Next Review	January, 2029		
MODULE DESCRIPTION			
Aim	The objective of this module is to provide an understanding and a working knowledge of the current topics, trends and technologies in the Software Engineering Industry. After following this module, the students should be able to apply the concepts, frameworks and technologies learnt throughout the module to effectively solve real world problems.		
Learning Outcomes	At the end of the module, the student will be able to:		
	LO1:	Analyze current technologies and their usages in the industry.	
	LO2:	Evaluate modern development tools, frameworks, technologies, and development processes for a given requirement.	
	LO3:	Apply current Software Engineering practices when developing Software Applications.	
	LO4:	Develop Software Applications using current development tools, frameworks, and technologies.	
Assessment Criteria	**Assessment Description:**		
	During the semester, there will be 3 assignments, one lab-based exam and a final exam. Assessments will be based on the practical		

	work, the questions discussed in tutorial sessions, and lecture material covered until the week before it is held. The final examination will be a comprehensive exam based on the practical assignments and lecture materials covered during the semester.		
	Assessment Activities:		
	Assignments/Laboratories	50%	LO4
	End of Semester Examination	50%	LO1-LO3
	Total	100%	
Estimated Student Workload	**Contact Hours**		
	Lectures	28 hours	
	Tutorials	14 Hours	
	Laboratory	28 hours	
	Time Allocated for Assessments		
	Continuous Assessments	40 Hours	
	End of Semester Examination	02 Hours	
	Reading and Independent Study	88 Hours	
	Total	200 Hours	
Module Pass Requirements	To pass this module, students need to obtain a pass mark in both "Continuous Assessments" and "End of the Semester Examination" components which would result in an overall mark that would qualify for a "C" grade or above.		
Learning Resources	**Recommended Texts** 1. K. Soze, "Blockchain Novice to Expert", 1st edition, 2017 2. S. Vaidyanatha, D. Nagamalai, E. Renault, and M. Dhanushkodi, "Trends in Computer Science, engineering and Information Technology", 2011 3. V. Mayer-Schonberger and K. Cukier, "Big Data: A Revolution That Will Transform How We ¨ Live, Work, and Think.", Boston, United States, Houghton Mifflin Harcourt, 2013.		

CONTENTS OF THE MODULE		
1.	**DevOps (10 hours)** a. Understanding the DevOps ecosystem b. Familiarizing with DevOps tools and Practices c. Integrating DevOps with the Cloud	LO1-LO3

2.	**Capability Clouds (10 hours)** a. Using Cloud APIs to develop enterprise applications b. Performing Data Analytics using Cloud APIs c. Securing and Auto-scaling Cloud based applications	LO1-LO4
3	**Micro services (10 hours)** a. Micro service Architecture b. Micro services With Kubernetes and Docker c. Deploy Kubernetics cluster in the cloud d. Elastic Search	LO1-LO4
4	**Mixed Reality Applications (10 hours)** a. Exploring AR and VR technologies and their differences b. Design Considerations for AR and VR c. Introduction to Metaverse	LO1-LO3
5	**Machine Learning (10 hours)**	LO1-LO4
	a Fundamentals of Machine Learning b Using Deep Learning to solve problems	
6	**Blockchain (10 Hours)**	LO1-LO3
	a Understanding the Blockchain b Transforming Transactions	
7	**Selected Topic in Software Engineering (10 hours)**	LO1-LO3

LEARNING OUTCOMES TO PROGRAM OUTCOMES MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
LO1				X						
LO2				X	X					
LO3			X						X	
LO4			X	X						

PO1	Demonstrate a depth and breadth of knowledge of theories, concepts, and practices of software engineering to produce innovative solutions effectively for real-world problems.
PO2	Extend their knowledge and generate new knowledge in the area of software engineering to conduct research and disseminate for continual development.
PO3	Develop solutions to complex real-world problems using appropriate theories, principles, tools, and processes found in software engineering and collect reflective feedback for critically evaluation and continual development in a systematic manner.
PO4	Undertake a deep investigative approach to identify, formulate, and analyze IT related problems in both familiar and unfamiliar domains to make valid judgments.

PO5	Evaluate, select, experiment, and justify the choices available in developing software solutions to cater the user expectations.
PO6	Communicate effectively for different purposes in different contexts using wide range of communication media and technical aids with clients and other IT professionals.
PO7	Demonstrate the ability to work effectively, as an individual or in a team, on multifaceted and/or multidisciplinary settings.
PO8	Demonstrate the awareness of cultural diversity and identify ethical, social, and global responsibilities and exercise initiatives, personal responsibility, and accountability in tasks performed for professional and community pursuits.
PO9	Use technologies appropriately for performing tasks and select them respectfully and responsibly for sustainable development.
PO10	Demonstrate the ability to evaluate an issue from a global perspective with having awareness of other cultures and their perspectives while respecting to them and competent on applying global standards/practices in relevant discipline.

GENERIC INFORMATION

Any type of plagiarism is not allowed.

Plagiarism: Academic honesty is crucial to a student's credibility and self-esteem, and ultimately reflects the values and morals of the Institute as whole. A student may work together with one or a group of students discussing assignment content, identifying relevant references, and debating issues relevant to the subject. Plagiarism occurs when the work of another person, or persons, is used and presented as one's own.

END OF MODULE OUTLINE