SLIIT Discover Your Future	**DEPARTMENT OF COMPUTER SCIENCE AND SOFTWARE ENGINEERING**
	FACULTY OF COMPUTING

MODULE OUTLINE			
Module Name	Application Frameworks		
Module Code	SE3040	**Version No.**	2024-1
Year/Level	3	**Semester**	1
Credit Points	04 Credits		
Pre-requisites	-		
Co-requisites	-		
Methods of Delivery	**Lectures**	2 Hours/Week	
	Tutorials	1 Hour/Week	
	Laboratories	2 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	This module intends to gather knowledge in many areas of frameworks in presentation, Persistence, Web service, Enterprise Applications Integration and Data access layers and test technologies of these frameworks comprises. Students will be exposed to both conventional and JavaScripting-based development in layered architecture.	
Learning Outcomes	At the end of the module, the student will be able to:	
	LO1:	Evaluate different types of frameworks used in web app development.
	LO2:	Apply frameworks to build software applications efficiently and effectively.
	LO3:	Use best practices for integrating frameworks into software projects.
	LO4:	Differentiate frameworks to meet specific project requirements
Assessment Criteria	**Assessment Description:**	
	During the semester, there will be four assessments and a final examination. The assessments will consist of a mid-term examination and two assignments.	

	Assessment Activities:		
	Mid-Semester examination	20%	LO1, LO3
	Assignments (2)	40%	LO2, LO4
	End of Semester Examination	40%	LO1 – LO4
	Total	100%	
Estimated Student Workload	**Contact Hours**		
	Lectures (face to face)	28 hours	
	Tutorials	14 Hours	
	Laboratory	28 hours	
	Time Allocated for Assessments		
	Continuous Assessments	40 Hours	
	Mid-Semester Examination	01 Hour	
	End of Semester Examination	02 Hours	
	Reading and Independent Study	87 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. D. Pilone and R. Miles, Head First Software Development, 1st ed. Sebastopol, CA: O'Reilly Media, Inc., 2007. 2. E. T. Freeman and E. Robson, Head First JavaScript Programming, 1st ed. Sebastopol, CA: O'Reilly Media, Inc., 2014. 3. M. Heckler, Spring Boot: Up and Running, 1st ed. Sebastopol, CA: O'Reilly Media, Inc., 2021. **Software** 1. Visual Studio Code 2. IntelliJ 3. Node JS		

CONTENTS OF THE MODULE		
1.	**Industry Best Practices (10 hours)** a. Engineering Practices b. Version Control c. GIT	LO3

2.	**Backend Development Frameworks (25 hours)** a. JavaScript b. NodeJS c. Architecture d. RESTful Services and Express JS e. Spring Boot	LO1, LO2, LO4
3.	**NoSQL Databases (10 hours)** a. Introduction b. MongoDB	LO2
4	**Frontend Frameworks (15 hours)** a. React JS b. Context API c. Redux	LO1, LO2, LO4
5	**Docker (10 hours)** a. Docker b. Web app deployment	LO2, LO4

LEARNING OUTCOMES TO PROGRAM OUTCOMES MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
LO1	X											
LO2			X									
LO3	X		X		X							
LO4			X		X							
Module	X		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