SLIIT Discover Your Future	DEPARTMENT OF SOFTWARE ENGINEERING FACULTY OF COMPUTING

MODULE OUTLINE			
Module Name	**Application Frameworks**		
Module Code	SE3040	Version No.	2017 - 3
Year/Level	3	Semester	1
Credit Points	4		
Pre-requisites	Internet Technologies and Applications Software Technology - II		
Co-requisites	None		
Methods of Delivery	Lectures (Face-to-face) Tutorials Labs	2 Hours/Week 1 Hours/Week 2 Hours/Week	
Course Web Site	http://courseweb.sliit.lk/		
Date of Original Approval	January 2017		
Date of Next Review	January 2018		

MODULE DESCRIPTION		
Introduction	This module intends to gather the knowledge in many areas of frameworks (Presentation, Persistence, Web service, Enterprise Applications and Enterprise Architectural) and latest technologies of these frameworks comprises. Students will be exposed to both traditional and java script development.	
Learning Outcomes	At the end of the module student will be able to:	
	LO1:	Understand the basic concepts of Frameworks
	LO2:	Incorporate Industry Standard Software Development practices
	LO3:	Develop Applications using Java Frameworks
	LO4:	Use Restful style web services

	LO5:	Develop Full Stack Web Applications using Java Script Frameworks (AngularJS, NodeJS, ExpressJS)
	LO6:	Be a lifelong learner

Assessment Criteria	During the semester, there will be 2 lab examinations, one mid-term, a group project and a final exam. The distribution of marks for the assessed components of the unit are as follows:			
	Continuous Assessments			
	• Technical Blog	5	%	LO6
	• Lab Examination – I	10	%	LO1-LO5
	• Midterm Examination	20	%	LO1-LO4
	• Group Project	25	%	LO1-LO6
	End Semester Assessment			
	• Final Examination	40	%	LO1-LO6
	TOTAL	100	%	

Estimated Student Workload	Contact Hours	
	• Lecture	26 hours
	• Tutorial	13 hours
	• Laboratory	26 hours
	Time Allocated for Assessments	
	• Continuous Assessments	04 hours
	• Final Examination	04 hours
	Reading and Independent Study	127 hours
	TOTAL	200 hours
Module Requirement	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	
Primary References	1. Walls, C. (2016). *Spring Boot in Action*. Manning Publications Company. 2. Ambler, T., Cloud, N., & Hawkes, R. A. (2015). *JavaScript Frameworks for Modern Web Dev*. Apress. 3. Fenton, S. (2014). *Pro TypeScript: Application-scale JavaScript Development*. Apress.	

CONTENTS OF THE MODULE
1. Industry Best Practices • Engineering Practices • Version Control • GIT
2. Introduction to Frameworks • Common features of frameworks • Usage of Frameworks
3. Architecture • RESTful web services • Microservice architecture, API gateway pattern and Service discovery
4. Using Java Frameworks • Spring, Spring Boot Application Development • Spring Core Module • Inversion of Control and Dependency Injection in Spring • Aspect Oriented Programming – Spring/AspectJ • Java Persistence API • Spring Implementation of JPA • Service discovery and API gateway patterns in Spring Boot.
5. Using JavaScript React JS, Node JS and Express JS • JavaScript and es6 • Introduction to React JS and Redux architecture with Webpack. • Introduction to Node JS, Events, Streams, File System, Modules. • Express JS and Express API gateway.

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----------