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

MODULE OUTLINE

Module Name	**Object Oriented Programming**		
Module Code	IT2030	Version No.	2017- 1
Year	2	Semester	1
Credit Points	4		
Prerequisites	None		
Corequisites	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, 2022		

MODULE DESCRIPTION

Introduction	The objective of this module is to introduce object oriented programming. The topics discussed in the module include implementing classes, inheritance, polymorphism, java collection classes, error handling, threads and design patterns. Students will also get a hands-on experience to develop applications in Java using modern Integrated Development Environments.	
Learning Outcomes	At the end of the module student will be able to:	
	LO1:	Apply object oriented concepts in Java Language
	LO2:	Demonstrate the knowledge in concurrency programming
	LO3:	Apply a suitable design pattern for a given problem
	LO4:	Utilize features of Java when developing an application.

<table>
<tr><td>Assessment Criteria</td><td colspan="4">Continuous assessments of this module are comprised of practical assignments and a mid-term test. In addition, a final examination will be held at the end of the semester. The final examination is a comprehensive practical examination in which application of theory, coding skills, and knowledge of coding standards are tested.</td></tr>
<tr><td></td><td colspan="4">Continuous Assessments</td></tr>
<tr><td></td><td>• Midterm Examination</td><td>20</td><td>%</td><td>LO1, LO4</td></tr>
<tr><td></td><td>• In class test</td><td>05</td><td>%</td><td>LO1</td></tr>
<tr><td></td><td>• Practical test</td><td>10</td><td>%</td><td>LO3</td></tr>
<tr><td></td><td>• Project</td><td>15</td><td>%</td><td>LO3, LO4</td></tr>
<tr><td></td><td colspan="4">End Semester Assessment</td></tr>
<tr><td></td><td>• Final Examination</td><td>50</td><td>%</td><td>LO1-LO4</td></tr>
<tr><td></td><td>TOTAL</td><td>100</td><td>%</td><td></td></tr>
<tr><td>Estimated Student Workload</td><td colspan="4">Contact Hours</td></tr>
<tr><td></td><td>• Lecture</td><td colspan="3">26 hours</td></tr>
<tr><td></td><td>• Tutorial</td><td colspan="3">13 hours</td></tr>
<tr><td></td><td>• Laboratory</td><td colspan="3">26 hours</td></tr>
<tr><td></td><td colspan="4">Time Allocated for Assessments</td></tr>
<tr><td></td><td>• Continuous Assessments</td><td colspan="3">03 hours</td></tr>
<tr><td></td><td>• Final Examination</td><td colspan="3">03 hours</td></tr>
<tr><td></td><td>Reading and Independent Study</td><td colspan="3">129 hours</td></tr>
<tr><td></td><td>TOTAL</td><td colspan="3">200 hours</td></tr>
<tr><td>Module Requirement</td><td colspan="4">To pass this module, students need to obtain an overall mark that would qualify for a “C” grade or above</td></tr>
<tr><td>Learning Resources</td><td colspan="4">Schildt Herbert, Java the complete reference, 9th Edition. (2014).
McLaughlin, Brett, Gary Pollice, and David West, Head First Object-Oriented Analysis and Design: A Brain Friendly Guide to OOA&D, O'Reilly Media, Inc, 2007.
Freeman E., Robson E., Bates B., & Sierra K, Head first design patterns, O'Reilly Media, Inc, 2004</td></tr>
</table>

CONTENTS OF THE MODULE	
Topics	**Learning Outcomes Covered**
1. Introduction to Java • Origins • What makes Java Unique • Comparisons with C++ as a Language • How a Java program is compiled and Executed • Data Types • Classes/Objects • How Java Class code and objects are different from C++	**LO1**
2. OOP concepts recapture • Access Modifiers • Encapsulation • Inheritance • Polymorphism – (Overloading / Overriding) • Abstract Classes • Interfaces	**LO1**
3. Exception Handling • Try Catch Blocks • Exception Classes • Custom Exception Classes	**LO4**
4. Collection & Generics Implementation • Collection & Generics • Java Collectors • String Class, String Buffer	**LO4**
5. Threads implementation • Thread Synchronization • Thread Lifecycle • Thread wait and notify • Thread Priority • Thread Yield(), join() methods • Create Daemon Threads	**LO2**

6. Design Patterns • Singleton /Thread safe Singleton • Command Pattern • Template Method • Factory / Abstract Factory • Strategy • Bridge	**LO3**

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----------