DEREE COLLEGE SYLLABUS FOR: **ITC 3234 OBJECT ORIENTED PROGRAMMING** **3/0/3**	
(Updated Spring 2020)	**UK LEVEL: 5** **UK CREDITS: 15**
PREREQUISITES:	ITC 1070 Information technology Fundamentals ITC 2188 Introduction to Programming
COREQUISITES:	None.
CATALOG DESCRIPTION:	Advanced object-oriented concepts and problem solving techniques. Advanced GUI components; event handling, java collections framework and data structures, data persistence, efficiency issues.
RATIONALE:	The course is designed as a continuation of ITC 2188 and aims to introduce a wider range of object oriented JAVA features; students will apply previously acquired knowledge in programming constructs together with design patterns that will be covered in the course. An in-depth view of Swing components, in combination with event handling, collections, and databases will lead to advanced object oriented application development.
LEARNING OUTCOMES:	As a result of taking this course, the student should be able to: 1. Explain and apply key principles of object-oriented programming such as abstraction, encapsulation, data hiding, inheritance, and polymorphism. 2. Demonstrate understanding of the properties of data structures and select the appropriate one to solve a computing problem. 3. Model software requirements using UML. 4. Design, implement, and test advanced, distributable, and maintainable object-oriented GUI applications.
METHOD OF TEACHING AND LEARNING:	In congruence with the teaching and learning strategy of the college, the following tools are used: • Lectures and class discussions. • Laboratory practical sessions and problem solving. • Online Tutorials. • Office hours held by the instructor to provide further assistance to students.

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<tr><td>ASSESSMENT:</td><td>
Summative:
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<tr><td>1st assessment: Midterm examination (short programming problems, short essay questions)</td><td>40%</td></tr>
<tr><td>2nd assessment: Portfolio of student work and oral assessment (not eligible for 2nd marking)</td><td>10%</td></tr>
<tr><td>Final assessment: Programming Project</td><td>50%</td></tr>
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Formative:
<table>
<tr><td>Short programming exercises</td><td>0</td></tr>
<tr><td>Online Quizzes</td><td>0</td></tr>
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The formative programming exercises and online quizzes aim to prepare students for the coursework and the examination.

The 1st assessment tests LOs 1, 2.
The 2nd assessment tests LOs 1-4.
The final assessment tests LOs 1-4.

The final assessment tests all learning outcomes of this module, therefore students pass the module if the average module grade is 40% or higher.
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<tr><td>INDICATIVE READING:</td><td>
REQUIRED READING:
Horstmann Cay S, (2012) Big Java: Late Objects, Wiley Press.

RECOMMENDED READING:
Horstmann Cay S., Cornell Gary. (2012) Core Java, Volume I Fundamentals, Prentice Hall.

Horstmann Cay S., Cornell Gary. (2012) Core Java, Volume II--Advanced Features, Prentice Hall.
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<tr><td>INDICATIVE MATERIAL:
(e.g. audiovisual, digital material, etc.)</td><td>REQUIRED MATERIAL: N/A
RECOMMENDED MATERIAL: N/A</td></tr>
<tr><td>COMMUNICATION REQUIREMENTS:</td><td>Daily access to the course's site on the College's Blackboard CMS and acg email.</td></tr>
<tr><td>SOFTWARE REQUIREMENTS:</td><td>Latest Java JDK and a Java IDE such as: Oracle JDeveloper (latest edition)</td></tr>
<tr><td>WWW RESOURCES:</td><td>
JAVA SE Documentation:
http://www.oracle.com/technetwork/java/javase/documentation/index.html

JavaFX: Getting Started with JavaFX
http://docs.oracle.com/javase/8/javafx/get-started-tutorial/index.html

The JAVA Tutorials
http://docs.oracle.com/javase/tutorial/
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INDICATIVE CONTENT:	1) Object Oriented Principles a) Classes and Objects b) Abstractions c) Encapsulation d) Inheritance e) Polymorphism 2) Modelling user requirements with UML 3) Object Life Cycle and Inner Classes 4) Abstract Classes and Interfaces 5) Throwing and Catching Exceptions 6) Collections and Data Structures a) Linked Lists b) Sets c) Maps d) Stacks, Queues e) Hash Tables 7) User Interface Design 8) Event Handling 9) Data Persistence a) Files b) Databases 10) Packaging and Deploying Applications