

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY
School of Computing and Informatics

Department of Computer Science
Course outline

CODE: BCS 366 **TITLE:** ADVANCED PROGRAMMING WITH JAVA

Course Lecturer

Prof. Kelvin K. Omieno K. (Ph.D)

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Lecturer Time : Thursday 7:00-10:00 AM

Mode : Physically Address: MPH

Course Name	BCS 366: ADVANCED JAVA PROGRAMMING
Credit Units	3
Pre-requisite	BCS 120: Object Oriented Programming I BCS 210: Object Oriented Programming II
Purpose	This course introduces the learner to the exploration of Java Enterprise Applications
Expected Learning Outcomes	a) Discuss common errors in Java and its associated libraries. b) Distinguish between exceptions and exception handling in java.
Course Content	<p>Review of Object oriented concepts.</p> <ul style="list-style-type: none">● Java class Design: immutable classes; interfaces.● Abstract classes: instance of operator; virtual method invocation; upward and downward casting.● Generics: custom generic classes; type interface diamond; generic methods; wild cards; enumerated types.● Collections: Create a collection without using generics; Create a collection using generics;● Implement an ArrayList● String Processing: Read, search, and parse Strings; Use StringBuilder to create Strings. <p>File I/O.</p> <ul style="list-style-type: none">● Exceptions and assertions: try and throw statements; catch, multi-catch, and finally statements;● Create custom exception and auto-closeable resources;● Test invariants by using assertions. <p>GUI Basics</p> <ul style="list-style-type: none">● Introduction● SWING Vs AWT● Frames● Layout Managers● Panels● Exception handling <p>GUI Advanced I</p> <ul style="list-style-type: none">● Event handling● Event and Source● Listeners <p>GUI Advanced II</p> <ul style="list-style-type: none">● Controls and Containers● Buttons● Textfields● Combo Boxes etc
Mode of Delivery	Lectures, demonstrations, Group/class discussions and practical exercises

Instructional Material and/or Equipment	Computers, Learning Management System, writing boards, writing materials, projectors etc.	
	Type	Weighting (%)
	Examination	70
	Continuous Assessment	30
	Total	100
Core Reading Material	<ol style="list-style-type: none"> 1. Matt Weisfeld, Addison-Wesley, (2008). The Object-Oriented Thought Process, 3rd Edition, ISBN-13: 978-0672330162 2. Deitel, H.M. & Deitel, P.J. (2005). Advanced Java 2 Platform how to program, Prentice- Hall, Inc. Upper Saddle River, New Jersey, ISBN: 074-5867846 3. David Flanagan (2005). Java in a Nutshell, O'Reilly Press. 	
Recommended Reading Material	<ol style="list-style-type: none"> 1. Frederick A. Hosch (2004). An Introduction to Programming and Object Oriented Design Using Java, ISBN-13: 978-0471712275 2. Simon Bennett, Steve McRobb and Ray Farmer (2010). Object oriented Systems and Design using UML. McGraw Hill, 2006, ISBN-13: 978-0077125363 3. Herb Schildt (2011). Java, A beginners Guide. McGraw-Hill, ISBN-13: 978-0071606325 	