

Lecture

	Course Particulars
S315	Title: Applications in Computer Programming

	Session Particulars	
#: 1	Title: Java Overview/ Revision	Hrs: 3

LEARNING OUTCOMES / ABILITIES GAINED*		
#	Outcome Description	
	Literals	
	Data Types	
	Variables	
	Type Conversion & Casting	
	Operators	
	Operators Precedence	
	Selection Statements	
	Loops	
	Jump Statements	

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Lecture

	Course Particulars
S315	Title: Applications in Computer Programming

	Session Particulars	
#: 2	Title: Arrays and 2D Arrays	Hrs: 3

LEARNING OUTCOMES / ABILITIES GAINED*		
#	Outcome Description	
	One Dimensional Arrays	
	Primitive vs. Reference Types	
	Linear Search	
	Binary Search	
	Sorting	
	Multidimensional Arrays	

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	Course Particulars
S315	Title: Applications in Computer Programming

		Session Particulars	
#: 3	Title: Methods		Hrs: 3

Learning Outcomes / Abilities Gained*		
#	Outcome Description	
	Magic Square Case Study	
	Static methods, static fields	
	Scope of Declaration	
	Declaring methods with multiple parameters	
	Method Overloading	
	Call by Reference and Call by Value	
	Using built – in static methods (Math Class, Random Class, JOptionPane Class)	
	Command Line Arguments	

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S315	Title: Applications in Computer Programming

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#: 4	Title: Classes & Objects	Hrs: 3

Learning Outcomes / Abilities Gained*		
#	Outcome Description	
	Encapsulation and Object Oriented Concepts	
	Instance Variables	
	Setter & Getter methods	
	toString Method	
	Controlling Class Members Access (Information Hiding)	
	Default and No-Argument Constructors	
	Parameterized Constructors	
	The this keyword	
	Constructor Overloading	
	Note on Reference Types	
	Instantiating Class Objects with Constructors	
	Garbage Collection and the finalize Method	

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	Course Particulars
S315	Title: Applications in Computer Programming

	Session Particulars	
#: 5	Title: Classes & Objects: A Deeper Look	Hrs: 3

Learning Outcomes / Abilities Gained*	
#	Outcome Description
	Object Oriented Case Study (Stack Array)
	Static Class Members
	Static Import
	Final Instance Variables
	Composition
	Using Objects as Parameters
	String Class
	Enumerations
	Creating Packages
	Package Access (Access Modifiers)

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#: 6	Title: Inheritance	Hrs: 3

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
	Inheritance Basics
	Super- and Sub-classes
	Protected Members
	Creating a Multilevel Hierarchy (Case Study)
	Constructors in Subclasses
	Method Overriding
	Using final with Inheritance
	The Object Class

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	Course Particulars
S315	Title: Applications in Computer Programming

		Session Particulars	
#: 7	Title: Mid Term Exam		Hrs: 3

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
	Mid term Exam
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S315	Title: Applications in Computer Programming

	Session Particulars	
#: 8	Title: Polymorphism & Interfaces	Hrs: 3

LEARNING OUTCOMES / ABILITIES GAINED*		
#	Outcome Description	
	Introducing Polymorphism	
	Abstract Classes & Methods	
	Case Study	
	Demonstrating Polymorphic Processing, Operator instance of and Down casting	
	Final Classes and Methods	
	Creating and using Interfaces	
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SESSION PLAN

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Course Particulars	
S315	Title: Applications in Computer Programming

		Session Particulars	
#: 9	Title: Data Structures		Hrs: 3

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	LEARNING OUTCOMES / ABILITIES GAINED*
#	Outcome Description
	Type- Wrapper Classes for Primitive Data Types
	Autoboxing and Auto-Unboxing
	Self-Referential Classes
	Dynamic Memory Allocation
	Stacks
	Linked List
	Ellikod Elst

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	Course Particulars
S315	Title: Applications in Computer Programming

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#: 10	Title:Dynamic Data Structure & Recursion	Hrs: 3

Learning Outcomes / Abilities Gained*		
#	Outcome Description	
	Trees	
	Recursion Concepts	
	Factorials	
	Fibonacci Series	
	Recursion and the Method Call Stack	
	Recursion vs. Iteration	

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Course Particulars	
S315	Title: Applications in Computer Programming

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#: 11	Title: Exceptions Handling	Hrs: 3

	LEARNING OUTCOMES / ABILITIES GAINED*		
#	Outcome Description		
	Exception-Handling Fundamentals		
	Java Exception Hierarchy		
	Uncaught Exceptions		
	Using try and catch		
	Displaying a Description of an Exception		
	Multiple catch Clauses		
	Finally block		
	Chained Exceptions		
	Declaring New Exception Types		

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Course Particulars	
S315	Title: Applications in Computer Programming

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#: 12	Title: Graphical User Interface	Hrs: 3

Learning Outcomes / Abilities Gained*		
#	Outcome Description	
	Overview of Swing Components	
	Displaying Text and Images in a Window	
	Text Fields and an Introduction to Event Handling	
	Common GUI Event Types and Listener Interfaces	
	How Event Handling Works	
	JButton	
	JCheckBox, JRadioButton	
	JComboBox and Using an Anonymous Inner Class for Event Handling	
	Mouse Event Handling	
	Adapter Classes	

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Course Particulars	
S315	Title: Applications in Computer Programming

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#: 13	Title: Accessing Databases with JDBC	Hrs: 3

Learning Outcomes / Abilities Gained*		
#	Outcome Description	
	JDBC Concept	
	Setting Up a Database	
	Establishing a Connection	
	Setting Up Tables	
	Retrieving Values from Result Sets	
	Updating Tables	
	Using Joins	
	SQL Statements for data manipulation	
	Creating Complete JDBC Applications Running the Sample Applications	
	Numining the Sample Applications	

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Course Particulars		
S315	Title: Applications in Computer Programming	

	Session Particulars	
#: 14	Title: Java Input and output (Files and Streams)	Hrs: 3

LEARNING OUTCOMES / ABILITIES GAINED*		
#	Outcome Description	
	Introduction	
	Files and Streams	
	Class File	
	Sequential Access Text Files	
	Random Access Files	
	Opening Files with JFileChooser	

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Course Particulars		
S315	Title: Applications in Computer Programming	

Session Particulars			
#: 15	Title: Project Presentation	Hrs: 3	

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
	Final Project Presentation

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Course Particulars	
S315	Title: Applications in Computer Programming

	Session Particulars	
#: 16	Title: Final Exam	Hrs: 3

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
	Final Exam

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<u>Lecture</u>

Source Material:

Java How to Program, Sixth Edidition, Deitel & Deitel

Supplementary Material: White Board and Data Show

Educational Resources: Handouts, presentations, assignments.

