

**National Institute of Electronics and Information Technology , Ajmers**  
**JAVA Syllabus for Summer /Industrial Training**

<b>S.No</b>	<b>Chapter</b>	<b>Topics</b>	<b>Theory</b>	<b>Practical</b>	<b>Total</b>
<b>1.</b>	<b>Introduction</b>	Programming language Types and Paradigms. Why Java ? Flavors of Java. Java Designing Goal. Role of Java Programmer in Industry. Features of Java Language. JVM –The heart of Java Java’s Magic Bytecode.	<b>2 hrs.</b>	<b>1 hr</b>	<b>3 hrs</b>
<b>2</b>	<b>Language Fundamentals</b> <b>The Java Environment:</b>	Installing Java. Java Program Development Java Source File Structure Compilation Executions.	<b>1 hr</b>	<b>2 hrs</b>	<b>3hrs</b>
<b>3</b>	<b>Basic Language Elements:</b>	Lexical Tokens, Identifiers Keywords, Literals, Comments Primitive Datatypes, Operators Assignments.	<b>1hr</b>	<b>2 hrs</b>	<b>3 hrs</b>
<b>4</b>	<b>Object Oriented Programming</b>	Class Fundamentals. Object & Object reference. Object Life time & Garbage Collection. Creating and Operating Objects. Constructor & initialization code block. Access Control, Modifiers, methods Nested , Inner Class &Anonymous Classes Abstract Class & Interfaces Defining Methods, Argument Passing Mechanism Method Overloading, Recursion. Dealing with Static Members.	<b>3 hr</b>	<b>3 hrs</b>	<b>6hrs</b>

		<p>Finalize() Method.  Native Method. Use of "this " reference.  Use of Modifiers with Classes &amp; Methods.  Design of Accessors and Mutator Methods  Cloning Objects, shallow and deep cloning  Generic Class Types</p>			
<b>5</b>	<b>Extending Classes and Inheritance</b>	<p>Use and Benefits of Inheritance in OOP  Types of Inheritance in Java  Inheriting Data Members and Methods  Role of Constructors in inheritance  Overriding Super Class Methods.  Use of "super".  Polymorphism in inheritance.  Type Compatibility and Conversion  Implementing interfaces.</p>	<b>1 hr</b>	<b>2 hrs</b>	<b>3hrs</b>
<b>6</b>	<b>Package</b>	<p>Organizing Classes and Interfaces in Packages.  Package as Access Protection  Defining Package.  CLASSPATH Setting for Packages.  Making JAR Files for Library Packages  Import and Static Import  Naming Convention For Packages</p>	<b>1hr</b>	<b>2 hrs</b>	<b>3hrs</b>
<b>7</b>	<b>Exception Handling:</b>	<p>The Idea behind Exception  Exceptions &amp; Errors  Types of Exception  Control Flow In Exceptions  JVM reaction to Exceptions  Use of try, catch, finally, throw,</p>	<b>1 hr</b>	<b>2hrs</b>	<b>3hrs</b>

		throws in Exception Handling. In-built and User Defined Exceptions Checked and Un-Checked Exceptions			
<b>8</b>	<b>Array &amp; String :</b>	Defining an Array Initializing & Accessing Array Multi –Dimensional Array Operation on String Mutable & Immutable String Using Collection Bases Loop for String Tokenizing a String Creating Strings using StringBuffer	<b>1 hr</b>	<b>2hrs</b>	<b>3hrs</b>
<b>9</b>	<b>Thread :</b>	Understanding Threads Needs of Multi-Threaded Programming. Thread Life-Cycle Thread Priorities Synchronizing Threads Inter Communication of Threads Critical Factor in Thread - DeadLock	<b>1 hr</b>	<b>2hrs</b>	<b>3hrs</b>
<b>10</b>	<b>Applet</b>	Applet & Application Applet Architecture. Parameters to Applet Embedding Applets in Web page. Applet Security Policies	<b>1 hr</b>	<b>2 hrs</b>	<b>3hrs</b>
<b>11</b>	<b>A Collection of Useful Classes</b>	Utility Methods for Arrays Observable and Observer Objects Date & Times Using Scanner Regular Expression Input/Output Operation in Java(java.io Package) Streams and the new I/O Capabilities	<b>3hrs</b>	<b>3hrs</b>	<b>6hrs</b>

		<p>Understanding Streams  The Classes for Input and Output  The Standard Streams  Working with File Object  File I/O Basics  Reading and Writing to Files  Buffer and Buffer Management  Read/Write Operations with File Channel  Serializing Objects</p>			
<b>12</b>	<b>GUI Programming</b>	<p>Designing Graphical User Interfaces in Java  Components and Containers  Basics of Components  Using Containers  Layout Managers  AWT Componets  Adding a Menu to Window  Extending GUI Features Using Swing Components  Java Utilities (java.util Package)  The Collection Framework :  Collections of Objects  Collection Types  Sets  Sequence  Map  Understanding Hashing  Use of ArrayList &amp; Vector</p>	<b>1hr</b>	<b>2 hrs</b>	<b>3hrs</b>
<b>13</b>	<b>Event Handling</b>	<p>Event-Driven Programming in Java  Event- Handling Process  Event-Handling Mechanism  The Delegation Model of Event Handling  Event Classes  Event Sources  Event Listeners  Adapter Classes as Helper Classes in Event Handling  Anonymous Inner classes a</p>	<b>3hrs</b>	<b>3hrs</b>	<b>6hrs</b>

		<p>Short –cut to Event Handling</p> <p>Avoiding Deadlocks in GUI Code</p> <p>Event Types &amp; Classes</p> <p>Networking Programming</p> <p>Networking Basics</p> <p>Client-Server Architecture</p> <p>Socket Overview</p> <p>Networking Classes and Interfaces</p> <p>Network Protocols</p> <p>Developing Networking Applications in Java</p>			
<b>14</b>	<b>Database Programming using JDBC</b>	<p>Introduction to JDBC</p> <p>JDBC Drivers &amp; Architecture</p> <p>CURD operation Using JDBC</p> <p>Connecting to non-conventional Databases.</p>	<b>1hr</b>	<b>2hrs</b>	<b>3hrs</b>
<b>15</b>	<b>Introduction to J2EE</b>	<p>J2EE Overview</p> <p>Why J2EE?</p> <p>J2EE Architecture</p> <p>J2EE APIs</p> <p>J2EE Containers</p>	<b>1hr</b>	<b>0 hr</b>	<b>1hr</b>
<b>16</b>	<b>Servlet</b>	<p>Web Application Basics.</p> <p>Architecture and challenges of Web Application.</p> <p>Introduction to servlet</p> <p>Servlet life cycle</p> <p>Developing and Deploying Servlets</p> <p>Exploring Deployment Descriptor (web.xml).</p> <p>Handling Request and Response</p> <p>Initializing a Servlet</p> <p>Accessing Database</p> <p>Servlet Chaining</p> <p>Session Tracking &amp; Management</p> <p>Dealing with cookies</p> <p>Transferring Request</p> <p>Accessing Web Context</p> <p>Passing INIT and CONTEXT</p>	<b>1hr</b>	<b>3hrs</b>	<b>4hrs</b>

		Parameter Sharing information using scope object Controlling concurrent access User Authentication Filtering Request and Response Programming Filter Filter Mapping Servlet Listeners			
<b>17</b>	<b>Java Server Pages:</b>	Basic JSP Architecture Life Cycle of JSP (Translation, compilation) JSP Tags and Expressions Role of JSP in MVC-2 JSP with Database JSP Implicit Objects Tag Libraries JSP Expression Language (EL) Using Custom Tag JSP Capabilities: Exception Handling Session Management Directives  JSP with Java Bean	<b>2hrs</b>	<b>2hrs</b>	<b>4hrs</b>
<b>18</b>	<b>PROJECT</b>	Designing, Developing, Documentation			<b>3 hrs per day</b>

<b>SYLLABUS FOR INDUSTRIAL TRAINING IN PHP AT NIELIT AJMER</b>			
<b>S.NO.</b>	<b>Date</b>	<b>Topic</b>	<b>Topics to be covered</b>
1	WEEK-1	HTML	All the tags (div, tables etc.)
2	WEEK-2	CSS	INTERNAL ,INLINE, EXTERNAL
3	WEEK-3	JAVA SCRIPT	INTRODUCTION
			WHY JAVA SCRIPT USED
			JS SYNTAX

			JS STATEMENTS
			JS COMMENTS
			JS VARIABLES
			JS DATA TYPES
			JS FUNCTIONS
		JAVA SCRIPT	JS EVENT
			JS OBJECT
			JS STRING
			JS NUMBERS
			JS OPERATORS
			JS ARRAYS
			JS CONDITIONS
4	WEEK-4	php	php intro
			php syntax
			php variavble
			php echo/print
			php data type
			php constants
		php	php if else
			php switch
			php while loops
			php for loops
			php functions
5	WEEK-5	php	php array
			php functions
		php forms	php form handling
			php validation
6	WEEK-6	php file handling	php file read Open/Read
			php file create
		php	cookies
			session
7	WEEK-7	php MY SQL	introduction
		php MY SQL	CONNECT
		php MY SQL	select, insert into
		php MY SQL	UPDATE, DELETE

30 DAYS TRAINING IN PHP /SUMMER TRAINNG					
S.NO.	Date	Topic	Topics to be covered	Theory hours	Practical hours
1	2ND JUNE 2014	HTML		1	1
2	3RD JUNE 2014	CSS	INTERNAL ,INLINE	1	1
3	4TH JUNE 2014	CSS	EXTERNAL	1	1
4	5TH JUNE 2014	JAVA SCRIPT	INTRODUCTION	1	1
			WHY JAVA SCRIPT USED		
			JS SYNTAX		
			JS STATEMENTS		
			JS COMMENTS		
			JS VARIABLES		
			JS DATA TYPES		
			JS FUNCTIONS		
5	6TH JUNE 2014	JAVA SCRIPT	JS EVENT	1	1
			JS OBJECT		
			JS STRING		
			JS NUMBERS		
			JS OPERATORS		
			JS ARRAYS		
			JS CONDITIONS		
6	9TH JUNE 2014	php	php intro	1	1
			php syntax		
			php variavble		
			php echo/print		
			php data type		
			php constants		
7	10th JUNE 014	php	php if else	1	1
			php switch		
			php while loops		
			php for loops		
			php functions		
8	11th JUNE 2014	php	php array	1	1
			php functions		
9	12th JUNE	php forms	php form handling	1	1



	2014		php validation		
10	13TH JUNE 2014	php file handling	php file read Open/Read	1	1
			php file create		
11	16TH JUNE 2014	php	cookies	1	1
			session		
12	17TH JUNE 2014	php MY SQL	introduction	1	1
13	18TH JUNE 2014	php MY SQL	CONNECT	1	1
14	19th JUNE 2014	php MY SQL	select, insert into	1	1
15	20TH JUNE 2014	php MY SQL	UPDATE, DELETE	1	1
16	23RD JUNE 2014 TO 28TH JUNE 2014	PROJECT	Designing, Devolping, Documentation	0	2 hours per day