



# SANATAN DHARMA

## COLLEGE HOSHIARPUR

### DEPARTMENT OF COMPUTER APPLICATION

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<b>Class</b>	<b>Postgraduate diploma in Computer Application</b>
<b>Subject Code and Name</b>	<b>Web Technologies (PGD-2102)</b>
<b>Time</b>	<b>45 min</b>
<b>Internal /External Marks</b>	<b>15/60</b>

**Objectives:** This course familiarizes students with concepts of HTML, CSS, JAVA

Scripts and PHP.

**Entry Behaviour:** The students are familiar with networking and basic working of Internet.

**Outcome:** The students will be able to learn the development of static and dynamic website

Unit No	Topics	Content
I	<ul style="list-style-type: none"> <li>HTML and CSS</li> </ul>	<p>Objective: In this section, basics of web page and development of static website are taught. Here In this first section we start with Html, structure of html various tags in html like list, hyperlink, images tables frame etc. we also discuss the concept of CSS for design the website.</p> <p><b>In cascading style sheets (CSS), the</b> Introduction to Style Sheets, Types of style Sheets-Inline, embedded and external style sheets are discussed along with examples.</p>
II	<ul style="list-style-type: none"> <li>Java script</li> <li>Java Script Objects</li> </ul>	<p>Objective of this section is to teach the client side scripting using javascript. Various topics covered under this are::Features of Javascript, tokens, data types, variables, operations, control constructs, strings, arrays, functions, Document Object Model, event handling. Applications related to client side form validation.</p> <p>Core language objects are also taught in depth which includes , The String Object, The Math Object, and</p>



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		<p>The Date Object; User Defined Objects: Creating a User Defined Object, Instances,</p> <p>Objects within Objects</p>
III	<ul style="list-style-type: none"> <li>• <b>Introduction to PHP</b></li> <li>• <b>Control Structures</b></li> <li>• <b>Functions</b></li> <li>• <b>Strings</b></li> </ul>	<p>The objective of this section is to teach the server side scripting using PHP. Various topics covered under this are :Embedding PHP code in a Web Page, Basic Syntax, Defining variable and constant, PHP Data types, Operators and Expressions. Control structures are also discussed such as Making Decisions, Doing Repetitive task with looping, File inclusion statements.</p> <p>Defining a function, Call by value and Call by reference, recursive</p> <p>function, Library functions</p> <p>String handling functions are discussed which includes: Creating and accessing String, Searching &amp; Replacing String, Formatting</p> <p>String, String Related Library function</p>
IV	<ul style="list-style-type: none"> <li>• <b>Arrays:</b></li> <li>• <b>Working with Forms</b></li> <li>• <b>Working with files and Directories</b></li> </ul>	<p>Objective of this section is to teach advanced programming features such as Anatomy of an Array, Creating index based and Associative array,</p> <p>Accessing array Element, Looping with associative array using each() and foreach(), Some useful Library function: current(), next(), prev(), reset(), end(). Super global variables, super global array, Importing and accessing user input, Combine HTML and PHP code.</p> <p>Handling Files and directories are taught which includes the toics such as Opening, closing, Coping, renaming and deleting a file, working with directories, File Uploading &amp; Downloading</p>



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References Books and Various web resources		
1	Books	<ol style="list-style-type: none"><li>1. Phillips Using HTML, PHI</li><li>2. Bayross, Ivan HTMLI,DHTML, Javascript by BPB Wanger &amp; Wyke</li><li>3. Java Script Unleashed, Techmedia, New Delhi.</li><li>4. Steve Suehring PHP6 and MYSQL Bible, Wiley India edition</li><li>5. Steven Holzner PHP:The complete Reference, Tata McGraw Hill</li><li>6 Kelvin Tetroi Programming PHP</li></ol>
2	Web Recourses	<p><a href="https://introcs.cs.princeton.edu/10elements">https://introcs.cs.princeton.edu/10elements</a> <a href="https://www.coursera.org/learn/java-programming">https://www.coursera.org/learn/java-programming</a> <a href="https://beginnersbook.com/2017/09/java-examples">https://beginnersbook.com/2017/09/java-examples</a></p>



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<b>Class</b>	<b>Postgraduate diploma in Computer Application</b>
<b>Subject Code and Name</b>	<b>Object Oriented Concepts using JAVA-(PGD-2101)</b>
<b>Time</b>	<b>45 min</b>
<b>Internal /External Marks</b>	<b>15-60</b>

**Entry Behaviour:** The students are aware of basic programming techniques such as looping, control structure. They can make procedural programs using C language.

**Outcome:** The objective of the course is to familiarize students with Object Oriented concepts including inheritance, visibility control etc. using JAVA programming

language

Unit No	Topics	Content
I	<ul style="list-style-type: none"> <li>• Fundamental of Java</li> </ul>	Objective: In this section basic concept of Java are taught explaining them the difference between procedural and object oriented language. Object Oriented features such as encapsulation, classes, objects, polymorphism are discussed in details. and various components of java like JVM, Byte code, variable, constant, operator, expression, control structure and also start with what are classes and object how we declare class and object how access class member inside and outside the class, explain constructor and method overloading with example ,
II	<ul style="list-style-type: none"> <li>• Inheritance</li> <li>• Arrays</li> <li>• Visibility Control</li> </ul>	Objective of this section is to teach the students the significance of re using the code with inheritance. concept of inheritance, base class and derived class, are explained along with various types of Inheritance. Dynamic method dispatch using abstract class and final keyword. Arrays, String Object, Math Object are taught along with various properties and methods of pre defined objects.
III	<ul style="list-style-type: none"> <li>• Packages of Interfaces</li> <li>• Exception Handling</li> <li>• Multi-threading Programming</li> </ul>	The objective of this section is to teach the packages and grouping of classes. This section is divided into three parts We also explain the concept of Package and Interfaces like import package, define interface, variable of interface, class path etc. There is another topics called exception handling topic like exception



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		types ,Try and catch statement multiple and Nested try catch statement, Multi-threading and I/O applets, in multithreading we describe the concept of thread model, priorities, synchronization, messages, how to run thread, create multiple thread.
IV	<ul style="list-style-type: none"><li>• I/O Applets</li><li>• Error and Exception handling</li></ul>	In this section we discuss two topics Applets and Error handling, In first section we start with Applet and Graphical programming In second section Exceptions and try catch block finally statement, Built-in exceptions.
<b>References Books and Various web resources</b>		
1	Books	An Introduction to Java Programming, PHI Programming with Java, A Primer Java Script Unleashed, Techmedia
2	Web Recourses	<a href="https://www.coursera.org/learn/java-programming">https://www.coursera.org/learn/java-programming</a> <a href="https://beginnersbook.com/2017/09/java-examples">https://beginnersbook.com/2017/09/java-examples</a>



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<b>Class</b>	<b>Postgraduate diploma in Computer Application</b>
<b>Subject Code and Name</b>	Software Engineering PGD -2103
<b>Time</b>	<b>45 min</b>
<b>Internal /External Marks</b>	<b>15/60</b>

Objectives: To describe basic Internet Protocols. Explain the concepts of JAVA and HTML tools for Internet programming. Describe scripting languages Java Script. Explain dynamic HTML programming. Explain Server Side Programming tools.

Unit No	Topics	Content
I	<ul style="list-style-type: none"> <li>• Software Engineering Fundamentals</li> <li>• . Software Process Models</li> </ul>	Here In this first section we start with Characteristics, Components, Applications, principles of software engineering, skills of software engineer. Software Development Life Cycle, Waterfall Life Cycle Model, Boehm's Spiral Life Cycle Model, win Win Spiral Model in details.
II	<ul style="list-style-type: none"> <li>• Software Project Management</li> <li>• Software Project Estimation and risk Management</li> </ul>	In this section we discuss the concept Software Project management Plan(SPMP), Project scheduling Techniques-Work Breakdown Structure(WBS), Project Evaluation Review Technique (PERT), Gantt Charts, Critical path method (CPM) Problem-based estimation, Process based estimation, Cost Estimation Model- COCOMO Model, Software Risks, software Risk management, Risk Management activities-Risk Assessment and Risk Control, Benefits of Risk management, SRS
III	<ul style="list-style-type: none"> <li>• Software Design</li> <li>• Structured Analysis and Design tools</li> </ul>	This section divided into two sections Software Design Process, Design Failures and Remedies and Structured Analysis and Structured Design (SASD)-Goals and Benefits, Data Flow Diagrams (DFD), Data Dictionary(DD), Entity-Relationship diagram(ERD)
IV	<ul style="list-style-type: none"> <li>• Software Testing:</li> <li>• Software Quality and Maintenance</li> </ul>	In this section we discuss two topics Objectives of software Testing, Principles of Software Testing, Software Testing Process, Black Box Testing, White Box Testing and



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		Software quality attributes, Factors affecting Software Quality, Aims of Software Maintenance, Types of Software Maintenance, Software Maintenance Costs.
<b>References Books and Various web resources</b>		
1	Books	Fairley Software Engineering Concepts, McGraw Hill 2. Lewis, T.G. Software Engineering, McGraw Hill. 3. Meyers, G. The Art of Software Testing, Wiley-Inter-Science ConstructingQualitySoftware, NorthHolland 4. Hibbard, P.G Publication 5. Shere, Kenneth Software Engineering & Management, Prentice Hall Software Quality Engineering : A Total Technical and 6 Deutsch, Willis Management Approach, Prentice Hall. Doug Bell, Ian Murrey and Software Engineering: A Programming Approach, 7. John Pugh Prentice Hall 8. Pressman: Software Engineering, Tata McGraw Hill 9. Ghazzi, Carlo Fundamentals of Software Engineering, PHI



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#### Methods and Technique of Teaching

Most of the teaching method and technique is based on ICT like power point presentation  
For student, video lecture, Simulation program etc.

"ICT in Education" means "Teaching and Learning with ICT"



#### Software for Practical Lab

1. System Software
  - Microsoft Windows Operating system(any version)
  - Linux Operating system(Any destroy)
2. The following application programs are for practical lab
  - Microsoft Office 2013,2016
  - Libre office
  - Open office
3. Web Application
  - WAMP
  - XAMPP
4. Programming and Database
  - Codeblock
  - Java
  - Oracle