ADVANCED JAVA AND J2EE
(Honors)

Course Code	20IT6601B	Year	III	Semester	II
Course Category	Honors	Branch	IT	Course Type	Theory
Credits	4	L-T-P	4-0-0	Prerequisites	C,C++
Continuous Internal Evaluation :	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes		
Upon Successful completion of course, the student will be able to		
CO1	Interpret the need for advanced Java concepts like enumerations and collections in developing modular and efficient programs	L2
CO2	Build server side program using JSP	L3
CO3	Describe how servlets fit into Java-based web application architecture	L4
CO4	Develop reusable software components using Java Beans	L4

Syllabus		
Unit No	**Contents**	**Mapped CO**
I	**Enumerations, Autoboxing and Annotations(metadata):** Enumerations, Enumeration fundamentals, the values() and valueOf() Methods, java enumerations are class types, enumerations Inherits Enum, example, type wrappers, Autoboxing, Autoboxing and Methods, Autoboxing/Unboxing occurs in Expressions, Autoboxing/Unboxing, Boolean and character values, Autoboxing/Unboxing helps prevent errors, A word of Warning. Annotations, Annotation basics, specifying retention policy, Obtaining Annotations at run time by use of reflection, Annotated element Interface, Using Default values, Marker Annotations, Single Member annotations, Built-In annotations.	CO1
II	**The collections and Framework:** Collections Overview, Recent Changes to Collections, The Collection Interfaces, The Collection Classes, Accessing a collection Via an Iterator, Storing User Defined Classes in Collections, The Random Access Interface, Working With Maps, Comparators, The Collection Algorithms, Why Generic Collections?, The legacy Classes and Interfaces, Parting Thoughts on Collections.	CO1
III	**Java Servlet Technology:** What is a servlet?, The Example Servlets, Servlet Life Cycle, Sharing Information, Initializing a Servlet, Writing Service Methods, Filtering Requests and Responses, Invoking Other Web Resources, Accessing the Web Context, Maintaining Client State, Finalizing a Servlet.	CO3
IV	**Java Server Pages Technology:** What is a JSP page? The Example JSP Pages, The Life Cycle of a JSP Page, Initializing and Finalizing a JSP Page, Creating Static Content, Creating Dynamic Content, Including Content in a JSP Page, Transferring Control to Another Web Component, Including an Applet, Extending the JSP Language.	CO2
V	**JavaBeans Components in JSP Pages:** JavaBeans Component Design Conventions, Why use a JavaBeans Component?, Creating and Using a JavaBeans Component, Setting JavaBeans Component Properties, Retrieving JavaBeans Component Properties.	CO4

Learning Resources
Text Books
1. Herbert Schildt: JAVA the Complete Reference, 7th/9th Edition, Tata McGraw Hill, 2007. 2. Stephanie Bodoff, Dale Green, Kim Haase, Eric Jendrock, Monica Pawlan, Beth Stearns: The J2EE Tutorial, 2nd Edition, Pearson Education Asia, 2004.
References
1. Y. Daniel Liang: Introduction to JAVA Programming, 7thEdition, Pearson Education, 2007. 2. Jim Keogh: J2EE-TheCompleteReference, McGraw Hill, 2007. 3. Uttam K Roy, Advanced JAVA programming, Oxford University press, 2015.
E- Resources and other Digital Material
NPTEL VIDEO LECTURES