Advanced Java Programming (3-0-3)

(Elective)

Evaluation:

	Theory	Practical	Total
Sessional	30	20	50
Final	50	-	50
Total	80	20	100

Objectives

1. To enable the students to understand the principles of the Java Language.
2. To enable students to learn to produce well designed, dynamic Web applications.
3. To introduce tools, technologies and framework hence Java Beans, Servlets, JSP and EJB are introduced to enhance web development skills.

Unit	Topic	Hours
1	**Multimedia: Applets and Application:** 1.1 Introduction to multimedia 1.2 Loading multimedia components using JMF (image, audio, video)	5
2	**RMI** 2.1 Introduction & Architecture of RMI 2.2 Java RMI classes and interfaces 2.3 Writing simple RMI application 2.4 Parameter passing in remote methods (marshalling and unmarshalling) 2.5 Introduction to CORBA	5
3	**JSP:** 3.1 Introduction and life cycle of JSP 3.2 JSP structure 3.3 Writing JSP program 3.4 JSPActions: include, forward and plugin, Managing sessions using JSP; JSP &Databases; 3.5 Error Handling in JSP; 3.6 Working with Java Mail-Understanding Protocols in Javamail-Components-Javamail	8
4	**Java Beans** 4.1Brief Introduction to JEE , Java Beans introduction, design pattern 4.2 Writing simple bean 4.3 Beans persistence and introspection 4.4 EJB 4.4.1 Architecture 4.4.2 Container classes, Interfaces 4.4.3 EJB types- Session, Entity, Message Driven	8
5	**Struts 2** 5.1 Introduction to MVC architecture 5.2 Struts architecture and environmental setup	10

	5.3 Struts configuration 5.4 Struts actions 5.5 Struts interceptors 5.6 Execute Struts application in Netbeans 5.7 Struts tags- control tags, form tags, data tags ad AJAX tags 5.8 Struts value stack/OGNL 5.9 Struts Validations 5.10 Struts Exception handling	
6	**Introduction of hibernate** 6.1 Overview Of hibernate 6.2 Hibernate Architecture 6.3 Understanding Hibernate <generator> element 6.4 Understanding Hibernate O/R Mapping 6.5 Struts 2 integration with Hibernate	7
7	**Internationalization** 7.1 Introduction to internationalization 7.2 Java support for i18n 7.3 Providing localized resources 7.4 Working with dates, numbers, and currencies	5
	Total Hours	**48**

Text Book

1. Herbert Schildt, Java The Complete Reference, Tata McGraw Hill Edition

Reference Books

1. Hans Bergsten - JavaServer Page, Publisher: O'Reilly
2. Dave Minter and Jeff Linwood -Beginning Hibernate from novice to professional, Apress
3. Kogent, Java 6 Programming Black Book, Dreamtech Publication
4. E.Balguruswami Programming with Java, A Primer, Tata McGraw Hill Edition