

Academic Course Description

BHARATH UNIVERSITY
Faculty of Engineering and Technology
Department of Electrical and Electronics Engineering

BEE046 Java Programming
Seventh semester(Odd Semester)

Course (catalog) description

To enable the students to become as java professional and able to work in real time environment

Compulsory/Elective course: Elective for EEE students

Credit & Contact hours : 3 and 45 hours

Course Coordinator : Ms.Kavitha

Instructors : Ms.Kavitha

Name of the instructor	Class handling	Office location	Office phone	Email (domain:@bharathuniv.ac.in)	Consultation
Ms.Kavitha	Final year EEE	KS 304	04422290125	vasshnikavitha@gmail.com	9.00-9.50 AM

Relationship to other courses:

Pre –requisites : BCS101-Fundamentals of Computing

Syllabus Contents

UNIT I INTRODUCTION TO OBJECT ORIENTED PROGRAMMING 9

Object oriented programming concepts – objects – classes – methods and messages – abstraction and encapsulation – inheritance – abstract classes – polymorphism.- Objects and classes in Java – defining classes – methods - access specifiers – static members – constructors – finalize method

UNIT II INHERITANCE 9

Arrays – Strings - Packages – Java-Doc comments -- Inheritance – class hierarchy – polymorphism – dynamic binding – final keyword – abstract classes

UNIT III GRAPHICS PROGRAMMING 9

The Object class – Reflection – interfaces – object cloning – inner classes – proxies - I/O Streams - Graphics programming – Frame – Components – working with 2D shapes.

UNIT IV JAVA SWING 9

Basics of event handling – event handlers – adapter classes – actions – mouse events – AWT event hierarchy – introduction to Swing – Model-View-Controller design pattern – buttons – layout management – Swing Components – exception handling – exception hierarchy – throwing and catching exceptions.

UNIT V GENERIC PROGRAMMING&MULTITHREADING 9

Motivation for generic programming – generic classes – generic methods – generic code and virtual machine – inheritance and generics – reflection and generics - Multi-threaded programming – interrupting threads – thread states – thread properties – thread synchronization – Executors – synchronizers.

Text book(s) and/or required materials

- T1. Cay S. Horstmann and Gary Cornell, “Core Java: Volume I – Fundamentals”, Eighth Edition, Sun Microsystems Press, 2008.
 T2. K. Arnold and J. Gosling, “The JAVA programming language”, Third edition, Pearson Education, 2000.

Reference Books:

- R1. Timothy Budd, “Understanding Object-oriented programming with Java”, Updated Edition, Pearson Education, 2000.
 R2. . C. Thomas Wu, “An introduction to Object-oriented programming with Java”, Fourth Edition, Tata McGraw-Hill Publishing company Ltd., 2006.

Computer usage:

Professional component

General	-	0%
Basic Sciences	-	0%
Engineering sciences & Technical arts	-	0%
Professional subject	-	0%
Open Elective	-	100%

Test Schedule

S. No.	Test	Tentative Date	Portions	Duration
1	Cycle Test-1	August 1 st week	Session 1 to 14	2 Periods
2	Cycle Test-2	September 2 nd week	Session 15 to 28	2 Periods
3	Model Test	October 2 nd week	Session 1 to 45	3 Hrs
4	University Examination	TBA	All sessions / Units	3 Hrs.

Mapping of Instructional Objectives with Program Outcome

To enable the students to becomes as java professional and able to work in real time environment	Correlates to program outcome		
	H	M	L
1. Understand fundamentals of programming such as variables, conditional and iterative execution, methods, etc.		i	l
2. Have the ability to write a computer program to solve specified problems		i	l
3. Understand fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries, etc.		i	l
4. Understand the basics of event handling, swing components and exception handling		i	l
5. Understand the basics of Multi-threaded programming		i	l

H: high correlation, M: medium correlation, L: low correlation

Draft Lecture Schedule

S.no	Topic	Problem solving Yes/no	Text/chapter
UNIT I INTRODUCTION TO OBJECT ORIENTED PROGRAMMING			
1.	Object oriented programming concepts	No	T2,T1
2.	objects – classes – methods and messages	No	
3.	abstraction and encapsulation	No	
4.	inheritance – abstract classes	No	
5.	polymorphism.- Objects and classes in Java	No	
6.	defining classes	No	
7.	methods - access specifiers	No	
8.	static members – constructors	No	
9.	finalize method	No	
UNIT II INHERITANCE			
10.	Arrays – Strings	No	T2
11.	Packages – Java-Doc comments	No	
12.	Inheritance	No	
13.	class hierarchy	No	
14.	polymorphism	No	
15.	dynamic binding	No	
16.	final keyword	No	
17.	abstract classes	No	
18.	abstract classes	No	
UNIT III GRAPHICS PROGRAMMING			
19.	The Object class	No	T1
20.	Reflection	No	
21.	interfaces	No	
22.	object cloning	No	
23.	inner classes	No	
24.	proxies	No	
25.	I/O Streams	No	
26.	Graphics programming	No	
27.	Frame – Components, working with 2D shapes	No	
UNIT IV JAVA SWING			
28.	Basics of event handling	No	T1
29.	event handlers – adapter classes	No	

Evaluation Strategies

Cycle Test – I	-	5%
Cycle Test – II	-	5%
Model Test	-	10%
Assignment	-	5%
Attendance	-	5%
Final exam	-	70%

Prepared by:
Ms.Kavitha

Dated :

Addendum

ABET Outcomes expected of graduates of B.Tech / EEE / program by the time that they graduate:

- a) An ability to apply knowledge of mathematics, science, and engineering fundamentals.
- b) An ability to identify, formulate, and solve engineering problems.
- c) An ability to design a system, component, or process to meet the desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- d) An ability to design and conduct experiments, as well as to analyze and interpret data.
- e) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- f) An ability to apply reasoning informed by the knowledge of contemporary issues.
- g) An ability to broaden the education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- h) An ability to understand professional and ethical responsibility and apply them in engineering practices.
- i) An ability to function on multidisciplinary teams.
- j) An ability to communicate effectively with the engineering community and with society at large.
- k) An ability in understanding of the engineering and management principles and apply them in project and finance management as a leader and a member in a team.
- l) An ability to recognize the need for, and an ability to engage in life-long learning.

Program Educational Objectives

PEO1: PREPARATION

Electrical Engineering Graduates are in position with the knowledge of Basic Sciences in general and Electrical Engineering in particular so as to impart the necessary skill to analyze and synthesize electrical circuits, algorithms and complex apparatus.

PEO2: CORE COMPETENCE

Electrical Engineering Graduates have competence to provide technical knowledge, skill and also to identify, comprehend and solve problems in industry, research and academics related to power, information and electronics hardware.

PEO3: PROFESSIONALISM

Electrical Engineering Graduates are successfully work in various Industrial and Government organizations, both at the National and International level, with professional competence and ethical administrative acumen so as to be able to handle critical situations and meet deadlines.

PEO4: SKILL

Electrical Engineering Graduates have better opportunity to become a future researchers/ scientists with good communication skills so that they may be both good team-members and leaders with innovative ideas for a sustainable development.

PEO5: ETHICS

Electrical Engineering Graduates are framed to improve their technical and intellectual capabilities through life-long learning process with ethical feeling so as to become good teachers, either in a class or to juniors in industry.

Course Teacher	Signature
Ms.Kavitha	

Course Coordinator
(Ms.Kavitha)

HOD/EEE

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