


CMR Institute of Technology, Bangalore		
Department(s): Masters of Computer Applications		
Semester: 04	Section : A & B	
ANALYSIS AND DESIGN OF ALGORITHMS	13MCA41	Lectures/week: 05
Course Instructor: Dr. Deepa Anand		
Course duration: Jan 2016 – May 2016		

Class #	Chapter Title / Reference Literature	Topic	Percentage of portion covered	
			Reference	Cumulative
1-12	TB1: 2.1 TB1: 2.2 TB1: 3.1 TB1: 3.2	INTRODUCTION & FUNDAMENTALS OF ANALYSIS OF ALGORITHM EFFICIENCY, BRUTE FORCE Notion of Algorithm, Fundamentals of Algorithmic Problem Solving, Important Problem Types, Fundamental data Structures. Analysis Framework, Asymptotic Notations and Basic efficiency classes, Mathematical analysis of Recursive and Non-recursive algorithms, Examples. Selection Sort and Bubble Sort, Sequential Search and String Matching.	23	23
8	TB1: 5.1 TB1: 5.2 TB2: 18.2 RB1: 1.5	DIVIDE AND CONQUER Mergesort, Quicksort, Binary Search, Binary tree Traversals and related properties, Multiplication of large integers, Strassen's Matrix Multiplication	15	38
5	TB1: Ch. 4 RB1: 22.4	Decrease-and-Conquer Insertion Sort, Depth First and Breadth First Search, Topological sorting, Algorithms for Generating Combinatorial Objects	10	48
6	TB1: Ch. 4 RB1: 22.4	Space and Time Tradeoffs Sorting by Counting, Input Enhancement in String Matching, Hashing.	12	60


5	TB1:8.2,8.4 RB:15.1,15.4	Dynamic Programming Computing a binomial coefficient, Warshall's and Floyd's Algorithms, The Knapsack Problem and Memory Functions	10	70
4	TB2: 3.1-3.2 RB1:23.2-23.3	Greedy Technique Prim's Algorithm, Kruskal's Algorithm, Dijkstra's Algorithm, Knapsack	8	78
12	TB2: 13.1, 13.2 TB2:13.7	Limitations of Algorithm Power Lower-Bound Arguments, Decision Trees, P, NP and NP-Complete Problems	22	100

Syllabus for Sessionals:

Sessional #	Syllabus
T1	Class # 01 – 19
T2	Class # 20 – 38
T3	Class # 39 – 52

Literature:


Book Type	Code	Author & Title	Publication info	
			Edition & Publisher	ISBN #
Text Book	TB1	Anany Levitin: Introduction to The Design & Analysis of Algorithms	2 nd Edition, Pearson Education, 2007.	0-13-231681-1
Text Book	TB2	Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran: Fundamentals of Computer Algorithms,	2 nd Edition, University press, 2007.	978-0914894223
Reference Book	RB2	Introduction to Algorithms, Thomas H. Cormen, Charles E. Leiserson, Ronal L. Rivest, Clifford Stein,.	2 nd Edition, PHI, 2006	978-0-262-03384-8

CMR Institute of Technology, Bangalore		
Department :Master of Computer Applications		
Semester: 04	Section : A & B	
Advanced Java Programming	13MCA42	Lectures/week: 06
Course Instructor(s): Ms Helen Josephine		
Course duration : Jan 2016 – May 2016		

Class #	Chapter Title / Reference Literature	Topic
1.	Chapter1:- Servlets	Servlet Structure, Servlet packaging
2.		HTMLbuilding utilities
3.		Lifecycle, Single Thread model interface
4.		Handling Client Request : Form Data
5.		Handling Client Request: HTTP Request Headers
6.		Generating server Response: HTTP Status codes
7.		Generating server Response: HTTP Response Headers
8.		Handling Cookies, Session Tracking
9.	Chapter 2:- JSP	Overview of JSP Technology, Need of JSP, Benefits of JSP
10.		Advantages of JSP, Basic syntax
11.		Invoking java code with JSP scripting elements, creating Template Text,
12.		Invoking java code from JSP, Limiting java code in J S P
13.		using jsp expressions, comparing servlets and jsp writing scriptlets. For example Using Scriptlets to make parts of jsp conditional
14.		using declarations, declaration example
15.		Controlling the Structure of generated servlets: the JSP

		page directive, import attribute, session attribute,
16.		isElignore attribute, buffer and auto flush attributes,
17.		info attribute ,errorPage and is errorPage attributes,
18.		is Thread safe Attribute, extends attribute
19.		language attribute, Including files and applets in jsp Pages,
20.		using java beans components in JSP documents
21.	Chapter 3:-	Creating Packages, Interfaces, JAR files and Annotations.
22.	Java Beans & Annotations	The core java API package, New java
23.		Lang Sub package, Built-in Annotations,Working with Java Beans
24.		Introspection, Customizers, creating java bean, manifest file, Bean Jar file, new bean
25.		adding controls, Bean properties, Simple properties, Design Pattern events,
26.		creating bound properties, Bean Methods, Bean an lcon, Bean info class, Persistence ,Java Beans API.
27.	Chapter 4:-	Talking to Database, Immediate Solutions
28.	JDBC	Essential JDBC program
29.		using prepared Statement Object
30.		Interactive SQL tool
31.		JDBC in Action Result sets
32.		JDBC in Action Result sets
33.		Mapping, Basic JDBC data types
34.		Advanced JDBC data types, immediate solutions
35.		Chapter 5:- Introduction to EJB
36.		Components Types. Server Side Component Types, Session Beans, Message Driven Beans, Entity Beans, The Java Persistence Model

37.		Container services. Dependency Injection, Concurrency
38.		Instance pooling n caching, Transactions, security, Timers
39.		Naming and object stores, Interoperability, Life Cycle Callbacks
40.		Interceptors, platform integration.
41.		Developing your first EJB. preparation, Definitions
42.		naming conventions,convention for the Examples, coding the EJB
43.		the contract, the bean Implementation class, out of Container Testing, Integration Testing.
44.	Chapter 6:- Server Side Component Models	The Stateless Session Bean
45.		the Stateful Session Bean
46.		the Singleton Session Bean
47.		Message- Driven Beans
48.		EJB and PERSISTENCE
49.		
50.		Persistence Entity manager Mapping Persistence objects
51.		
52.		Entity Relationships

CMR Institute of Technology, Bangalore			
Department(s): Master of Computer Applications			
Semester: 04	Section : A & B		
Advanced Web Programming	13MCA43	Lectures/week: 06	
Course Instructor : Ms. Uma B			
Course duration : Jan 2016 – May 2016			

Prerequisites:

HTML, CSS, JS, C, Internet, Web Server & Browser, SQL queries

Class #	Chapter Title / Reference Literature	Topic	Percentage of portion covered	
			Reference	Cumulative
1	Unit 1 : PROGRAMMING IN PERL	Origins and uses of Perl, Scalars and their operations	10	10
2		Assignment statements and simple input and output, Control statements		
3		Fundamentals of arrays		
4		Hashes, References		
5		Functions, Pattern matching		
6		File input and output; Examples		
8	Unit 2 : CGI SCRIPTING	What is CGI? Developing CGI Applications	10	20
9		Processing CGI, Introduction to CGI.pm		
10		CGI.pm methods, Creating HTML Pages Dynamically		
11		Using CGI.pm – An example		
12		Adding Robustness, Carp and cookies		
13	Unit 3 : BUILDING WEB APPLICATIONS WITH PERL	Uploading files	10	30
14		Tracking users with Hidden Data		
15		Using Relational Databases.		
16		using libwww Example programs		
17	Unit 4 : INTRODUCTION TO PHP	Origins and uses of PHP, Overview of	20	50
18		General syntactic characteristics		
19		Primitives, operations and expressions		
20		Output, Control statements, Arrays		
21		Functions, Pattern matching		
22		Form handling, Files		
23		File Handling - Example		
24		Example programs of PHP		
25	Unit 5 : BUILDING WEB APPLICATIONS	Tracking users	10	60
26		cookies		
27		sessions		
28		Sessions (contd)		


29	WITH PHP	Using Databases		
30		Using Databases (contd)		
31		Handling XML		
		Additional Programs		
33	Unit 6 : INTRODUCTION TO RUBY	Origins and uses of Ruby	10	70
34		Scalar types and their operations		
35		Simple input and output		
36		Control statements, Arrays		
37		Hashes, Methods		
38		Classes, Code blocks and iterators		
39		Pattern matching		
40	UNIT 7: INTRODUCTION TO RAILS	Overview of Rails	10	80
41		Document requests, Processing forms		
42		Processing forms (contd)		
43		Rails applications with Databases		
44		Rails applications with Databases (contd), Layouts.		
45	UNIT 8: INTRODUCTION TO WEB2.0	What is Web 2.0?, Folksonomies and Web 2.0	10	90
46		Software As a Service (SaaS), Data and Web 2.0		
47		Convergence, Iterative development, Rich User experience		
48		Multiple Delivery Channels, Social Networking		
49	UNIT 9: WEB SERVICES	Web Services	10	100
50		Web Services: SOAP		
51		RPC Style SOAP		
52		RPC Style SOAP, Document style SOAP		
53		Document style SOAP, WSDL		
54		REST services, JSON format		
55		What is JSON		
56		Array literals, Object literals, Mixing literals		
57		JSON syntax		
58		JSON Encoding and Decoding		
59		JSON Encoding and Decoding		
60		JSON versus XML		
61		More Examples		
62		More Examples		

Syllabus for Sessionals:

Sessional #	Syllabus
T1	Class # 01 – #16
T2	Class # 17 - #46
T3	Class # 47 - #62

Literature:

Book Type	Code	Author & Title	Publication info	
			Edition & Publisher	ISBN #
Text Book	TB1	Chris Bates: Web Programming Building Internet Applications	3rd Edn, Wiley India, 2006	978-81-317-1625-0
Text Book	TB2	Robert W. Sebesta: Programming the World Wide Web	4th Edition, Pearson Education, 2008	978-81-317-6458-9
Text Book	TB3	Francis Shanahan: Mashups	Wiley India 2007	978-0-470-09777-9
References	RB1	M. Deitel, P.J. Deitel, A. B. Goldberg: Internet & World Wide Web How to H program.	3rd Edition, Pearson Education / PHI, 2004	978-0-13-215100-9
References	RB2	Xue Bai et al: The Web Warrior Guide to Web Programming	Thomson, 2003	978-0619064587
References	RB3	Joel Murach's PHP and MySQL	Mauch's Publications, First Edition	978-1-890774-79-0

CMR Institute of Technology, Bangalore		
Department : Master of Computer Applications		
Semester: 04	Section : A & B	
Data Warehousing and Data Mining	13MCA442	Lectures/week: 05
Course Instructor(s): Dr. S. Senthil		
Course duration: Feb 2016 –May 2016		

Class #	Chapter Title / Reference Literature	Topic	Percentage of portion covered	
			Reference	Cumulative
1	RB2 : 4.1 to 4.2	Data Warehouse basic concepts	15.38	15.38
2		Data Warehouse Modeling – Data cube and OLAP		
3	TB1 :1.1 to 1.4	Data Mining - Introduction	11.54	26.92
4		What is Data Mining		
5		Motivating Challenges		
6		Data Mining Tasks		
7	RB2 :1.5 to 1.6	Which Technologies are used?	11.54	38.46
8		Which kinds of applications are targeted by Data Mining?		
9	TB1 :2.1 to 2.3	Types of Data	15.38	53.84
10		Data Mining Applications		
11		Data Preprocessing		
12	TB1 :6.2 to 6.7	Frequent Itemset Generation	23.08	76.92
13		Rule Generation		
14		Compact Representation of Frequent Itemsets		
15		Alternative methods for generating Frequent Itemsets		
16		FP Growth Algorithm		
17		Evaluation of Association Patterns		
18	TB1 : 4.1 to 4.3,5.1 to 5.2 TB2 : 3.9 to 3.12	Basics	15.38	92.30
19		General approach to solve classification problem		
20		Decision Trees		
21		Rule Based Classifiers		
22		Nearest Neighbor Classifiers		
23		Bayesian Classifiers		
24		Estimating Predictive accuracy of classification methods		
25		Improving accuracy of clarification methods		
26		Evaluation criteria for classification methods		
27		Multiclass Problem		
28	TB2 : 4.1 to 4.8,4.10	Overview	15.38	92.30
29		Features of cluster analysis		
30		Types of Data and Computing Distance		
31		Types of Cluster Analysis Methods		
32		Partitional Methods		
33		Hierarchical Methods		


34		Density Based Methods		
35		Quality and Validity of Cluster Analysis		
36	RB2 :12.2, 12.3, 12.5 & 12.6	Outlier Detection methods	7.70	100
37		Statistical Approaches		
38		Clustering based applications		
39		Classification based approach		

Syllabus for Sessionals :

Sessional #	Syllabus
T1	Class # 01 – 17
T2	Class # 18–30
T3	Class # 31 - 40

Literature:

Book Type	Code	Author & Title	Publication info	
			Edition & Publisher	ISBN #
Text Book	TB1	Pang-Ning Tan, Michael Steinbach, Vipin Kumar: Introduction to Data Mining.	Addison-Wesley, 2005	978-81-317-1472-0
Text Book	TB2	G. K. Gupta: Introduction to Data Mining with Case Studies.	3rd Edition, PHI, New Delhi, 2009.	978-81-203-4326-9
References	RB1	Arun K Pujari: Data Mining Techniques	University Press, 2nd Edition, 2009.	978-8173716720
References	RB2	Jiawei Han, MichelineKamber&Jian Pei: Data Mining - Concepts and Techniques.	2nd Edition, Morgan Kaufmann Publisher, 2006	978-81-312-0535-8
References	RB3	Alex Berson and Stephen J. Smith: Data Warehousing, Data Mining, and OLAP Computing.	McGrawHill Publisher, 1997.	0-07-006272-2

CMR Institute of Technology, Bangalore		
Department(s): Master of Computer Applications		
Semester: 04	Section : A	
Enterprise Resource Planning	13MCA455	Lectures/week: 05
Course Instructor : Ms. Gomathi T		
Course duration: Feb 2016 – May 2016		

Course Objective:

- Comprehend the technical aspects of ERP systems
- Learn concepts of reengineering and how they relate to ERP system implementations
- Understand the steps and activities in the ERP life cycle
- Be able to identify and describe typical functionality in an ERP system

Course Pre-requisites:

A basic information systems knowledge and Software Engineering.

Course Outcome:

By end of this course the students will be able to

- Understand business process reengineering, technologies involved in building ERP.
- Understand different modules in ERP and ERP implementation and ERP market
- Examine systematically the planning mechanisms in an enterprise, and identify all components in an ERP system and the relationships among the components.
- Understand project management and monitoring in an ERP system, and systematically develop plans for an enterprise;
- Use ERP implementation

Class #	Chapter Title / Reference Literature	Topic	Percentage of portion covered	
			Reference	Cumulative
1	TB1: Part I : 1, 2, 3,4,5,6	Overview of ERP	13%	13%
2		Benefits of ERP		
3		ERP and related technologies		
4		ERP and related technologies		
5		Business Process Re-engineering		
6		Business Process Re-engineering		
7		Business Process Re-		

		engineering		
8		Data Warehousing		
9		Data Warehousing		
10	TB1: Part I: 7, 8, 9	Data Mining	13%	26%
11		Data Mining		
12		Data Mining		
13		Online Analytical Processing		
14		Online Analytical Processing		
15		Supply Chain management		
16		Supply Chain management		
17	Supply Chain management			
18	TB1: Part II 11,12,14,15,16,17,18	Implementation Lifecycle	13%	39%
19		Implementation Methodology		
20		Hidden costs		
21		Organizing implementation		
22		Vendors, Consultant and users, Contracts		
23		Vendors, Consultant and users, Contracts		
24		Project management and monitoring		
25		Project management and monitoring		
26	TB1: Part III 20,21,22,23	Business modules in ERP packages	13%	52%
27		Business modules in ERP packages		
28		Finance		
29		Finance		
30		Manufacturing		
31		Manufacturing		
32		Human resources		
33		Human resources		
34	TB1: Part III 24,25,26,27	Plant maintenance	12%	64%
35		Materials management		
36		Materials management		
37		Quality Management		
38		Quality Management		
39		Sales and distribution		
40	Sales and distribution			
41	TB1: Part IV 28,29,30,31,32,33,34,35	ERP market place	12%	76%
42		People soft,		
43		SAPAG		

44		Baan Company		
45		JD Edwards world solutions company		
46		Oracle corporation		
47		QAD		
48		System Software Associates		
49	TB1: Part V 36,37,38	Turbo charge the ERP system	12%	88%
50		Turbo charge the ERP system		
51		EIA		
52		EIA		
53		EIA		
54		ERP and E-Commerce		
55		ERP and E-Commerce		
56		ERP and E-Commerce		
57	TB1: Part V 39,40	Future directions in ERP	12%	100%
58		Future directions in ERP		
59		Future directions in ERP		
60		ERP and Internet		
61		ERP and Internet		
62		ERP and Internet		

Syllabus for Sessionals:

Sessional #	Syllabus
T1	Class # 01 -25
T2	Class # 26-45
T3	Class # 46 -62

Literature:

Book Type	Code	Author & Title	Publication info	
			Edition & Publisher	ISBN #
Text Book	TB1	Alexis Leon, "ERP Demystified"	Tata McGraw Hill, 1999	0-07-463713-4
Text Book	TB2	Joseph A Brady, Ellen F. Monk, Bret J. Wanger, "Concepts in Enterprise Resource Planning",	Thomson Learning, 2001	9780619015930
Reference Book	RB2	Vinod Kumar G and N K Venkata Krishnan, "Enterprise Resource Planning Concepts and Planning"	Prentice Hall, 1998	-
References	RB2	Jose Antonio Fernandez, "The SAP r/3 handbook",	Tata McGrawHill	-