



SATHYABAMA UNIVERSITY
(Established under section 3 of UGC Act, 1956)
Jeppiaar Nagar, Rajiv Gandhi Salai (OMR), Chennai – 600 119, Tamil Nadu. India.
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SCHOOL OF COMPUTING DEPARTMENT OF INFORMATION AND TECHNOLOGY

ACADEMIC YEAR 2016-2017_ ELECTIVES



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SCHOOL OF COMPUTING
DEPARTMENT OF INFORMATION TECHNOLOGY
STUDENT CIRCULAR 2013 BATCH

04.05.2016

This is to inform you that it is mandatory to select two elective subjects for the VII semester of Academic year 2016-2017 based on your area of interest. You can select any two of the following subjects

1. SIT1402 Mobile Application Development
2. SIT1606 Big Data
3. SCSX1038- Software Quality Assurance and Testing

Confirm the elective Confirm the elective subject through your counselors to the HOD on or before
11-05-2016

HOD-IT
(Dr.R.Subhashini)

SIT1402	MOBILE APPLICATION DEVELOPMENT	L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT 1 INTRODUCTION AND UI INTERFACE

9 Hrs.

Introduction to mobile technologies, mobile operation systems, Mobile devices - pros and cons, Introduction to Android, Versions, Features, Architecture, UI Widgets and Events handling, Layouts, Required tools - Eclipse, ADT, AVD, Application structure, AndroidManifest file, Android design philosophy, Creating Android applications.

UNIT 2 BUILDING BLOCKS AND DATABASES

9 Hrs.

Introduction to Activities and Intents - Understanding Activity life cycle, Linking Activities, Passing Data, Toast, Displaying a Dialog Window and Notifications. Content Provider, Services, Broadcast receivers, accessing databases, sample applications, debugging and deploying app, publish in Playstore.

UNIT 3 OBJECTIVE C PROGRAMMING

9 Hrs.

Objective C - Data Types and Expressions, Decision Making and Looping, Objects and Classes, Property, Messaging, Categories and Extensions, Fast Enumeration - NSArray, NSDictionary, Methods and Selectors, Static & Dynamic objects, Exception handling, Memory management, Required Tools - Xcode, iOS Simulator, Instruments, ARC, frameworks.

UNIT 4 INTRODUCTION TO iOS

9 Hrs.

Introduction to iPhone, History, Versions, Features, MVC Architecture, View Controller - Building the UI and Event handling, Application life cycle, Tab Bars, Story Boards and Navigation Controllers, Table View, Push Notification, Database handling, Debugging and Deployment, Publishing app in Appstore, sample applications.

UNIT 5 WINDOWS MOBILE APP DEVELOPMENT

9 Hrs.

Introduction to Windows Phone 8, Application Life cycle, UI Designing and events, Building, Files and Storage, Network Communication, Push Notification, Background Agents, Maps and Locations, Data Access and storage, Introduction to silverlight and XAML, Running and Debugging the App, Deploying and Publishing.

Max. 45 Hours

COURSE OUTCOMES

On completion of the course, student will be able to

CO1 : Comprehend various mobile technology and business trends in mobile applications.

CO2 : Develop the mobile applications using various controls.

CO3 : Explore Objective C and sketch out the different built in blocks

CO4 : Assess and deploy Iphone OS and apps

CO5 : Design mobile applications using emulators.

CO6 : Create applications to hand-held devices

TEXT / REFERENCE BOOKS

1.Reto Meier, "Professional Android Application Development", Wrox Edition.

2.<http://www.tutorialspoint.com/android/index.htm>

3.<http://developer.android.com/training/index.html>

4.Stephen G. Kochan, "Programming in Objective C", Addison Wesley, 4th Edition.

5.David Mark, Jack Nutting and Jeff LaMarche, "Beginning iOS 5 Development", Apress Edition.

6.Baijian Yang, Pei Zheng, Lionel M. Ni, "Professional Microsoft Smartphone Programming", Wrox Edition.

END SEMESTER EXAM QUESTION PAPER PATTERN

Max. Marks : 100

Exam Duration : 3 Hrs.

PART A : 10 questions of 2 marks each - No choice

20 Marks

PART B : 2 questions from each unit of internal choice, each carrying 16 marks

80 Marks

Name List: Mobile Application Development

Roll No	Student Name
13SIT601	AADITH. R
13SIT101	ABISHA ANTO IGNATIOUS. L
13SIT302	ABISHA AUXLIN. P
13SIT617	AISWARYA. S
13SIT102	AJITHRAJ. P
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13SIT609	MADURI VASUDEV
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13SIT616	VENNA ASHOK KUMAR
13SIT159	VIMAL RAJ. G
13SIT160	VISHAUL ACHARYA. K

SIT1606	BIG DATA	L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT 1 INTRODUCTION

9 Hrs.

Introduction to Big Data - Challenges of Conventional Systems - Nature of Data - Small data - Medium data - Big Data - Small data vs Big data - Sources of Big Data - Big Data Characteristics - Big Data Analytics - Importance of Big Data, Big Data in the Enterprise - Big Data Enterprise Model - Building a Big Data Platform - Big data in Social and Behavioral sciences.

UNIT 2 HDFS, HADOOP AND HADOOP INFRASTRUCTURE

9 Hrs.

Hadoop and Databases - Typical Datacenter Architecture - Adding Hadoop to the Mix - Key Benefit - Flexibility: Complex Data Processing - HDFS - Hadoop Infrastructure - Architecture - Different in Data Model and Computing Model - HDFS Files and Blocks, Components of HDFS - Hadoop framework - HDFS - Map Reduce Framework - Data Loading techniques - Hadoop Cluster Architecture - Hadoop Configuration files - Hadoop Cluster modes - Single Node - Multi Node - Fully distributed node.

UNIT 3 HADOOP MAP REDUCE FRAMEWORK

9 Hrs.

Relationship between MapReduce and HDFS - Relationship between MapReduce and HDFS - Clients, Data Nodes, and HDFS Storage - MapReduce workloads. Hadoop framework - Hadoop data types - Hadoop map reduce Paradigm - Map and Reduce Tasks - Map reduce Execution framework - Partitioners and Combiners - Input formats (Input Splits and Records, Text Input, Binary Input, Multiple Inputs)- Output Formats (TextOutput, BinaryOutPut, Multiple Output)- Hadoop Mapreduce programming - Advanced Map reduce concepts - Counters, Custom Writables - Unit testing framework - Error Handling - Tuning - Advanced Map reduce.

UNIT 4 HADOOP IMPLEMENTATION AND HADOOP ECO SYSTEM TOOLS

9 Hrs.

Hadoop Implementation - Job Execution - Hadoop Data Types - Job Configurations - Input and Output Formats - ECO system tools - Pig's Data Model, Pig Latin, Developing & Testing Pig Latin Scripts - Writing Evaluation, Filter, Load & Store Functions - Hive - Hive Architecture - Comparison with Traditional Database - HiveQL: Data Types, Operators and Functions - Hive Tables - Querying Data - Advance Hive, NoSQL Databases - HBase - Loading Data in Hbase - Querying Data in Hbase

UNIT 5 HADOOP PROJECT ENVIRONMENT

9 Hrs.

HBase: Introduction to HBase, Client API's and their features, Available Client, HBase Architecture, MapReduce - Integration. HBase: Advanced Usage, Schema Design, Advance Indexing, Coprocessors, Hadoop 2.0 -MRv2 - YARN - NameNode High Availability, HDFS Federation, MRv2, YARN, Running MRv1 in YARN, Upgrade your existing MRv1 code to MRv2, Programming in YARN framework-cover Apache Oozie Workflow Scheduler for Hadoop

Max. 45 Hours

COURSE OUTCOMES

On completion of the course, student will be able to–

1. Comprehend Enterprise Data to make Business Decisions
2. Analyse methods of loading voluminous data into Big Data framework using Flume and Sqoop.
3. Demonstrate the functions of Map Reduce Framework on any huge amount of Data
4. Apply Ecosystem tools for querying structured and unstructured Data.
5. Manage Data using HBase Framework.
6. Develop an application using Big Data tools.

TEXT / REFERENCES BOOKS

1. WA Gmob, "Big Data and Hadoop", Kindle Edition, 2013
2. Eric Miller, "A Overview of Map Reduce and its impact on Distributed Data", Kindle Edition, 2012.
3. Strata, "Big Data Now", O'Reilly Media Inc., Kindle Edition, 2012.

END SEMESTER EXAM QUESTION PAPER PATTERN	
Max. Marks : 100	Exam Duration: 3 Hrs.
PART A: 10 questions of 2 marks each - No choice	20 Marks
PART B : 2 Questions from each unit with internal choice, each carrying 12 marks	80 Marks

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SCSX1038	SOFTWARE QUALITY ASSURANCE AND TESTI (Common to CSE & IT)	NG	T	P	Credits	Total Marks
		L				
		3	0	0	3	100

UNIT I INTRODUCTION

10 hrs.

Software quality- Role of testing – Software testing fundamentals - Verification and validation- Testing principles- Objectives and issues of testing – Testing lifecycle.

Test process – Testing activities –11 steps of test process(only steps) – How does test information flows? – Test cases – What it is?(Concept & introduction) – Test case selection – Test planning and design – Monitoring and measuring test execution – Test tools and automation.

UNIT II LEVELS AND TYPES OF TESTING

10 hrs.

Levels – Unit testing – Intergration testing – System testing – Acceptance testing – Alpha testing & beta testing – Manual vs automated testing – Testers workbench.

Types – Installation testing – Usability testing – Regression testing – Performance testing – Load testing – Stress testing – Security testing.

Testing specialized systems and applications – Testing object oriented software – Testing web based applications – Computer aided software testing tools (CAST) (only concepts and types need to be discussed).

UNIT III SOFTWARE TESTING METHODS AND STRATEGIES

10 hrs.

Static vs dynamic testing – Static testing techniques – Review types – Informal reviews – Walkthrough-Inspection- Static analysis – Dynamic testing – Need & advantages – White box(structural) testing – Flow graph notation – Cyclomatic complexity analysis – Deriving test cases – Data flow analysis – Control structure testing – Black box(functional) testing – Equivalence partitioning – BVA – Cause effect graphing – Syntax testing – Deriving test cases.

Defects – Defect tracking – recording, reporting – defect cause analysis – defect classes.

UNIT IV SOFTWARE QUALITY CONSIDERATIONS

10 hrs.

Quality assurance vs quality control – Quality factors – McCall's – FURPS-ISO 9126 – Quality metrics – Process improvement – The SEI process capability maturity model – TMM – ISO – Six sigma.

UNIT V SOFTWARE QUALITY ASSURANCE

10 hrs.

Need for SQA – SQA activities – Building blocks of SQA – SQA planning & standards – Reliability measures.

REFERENCE BOOKS:

1. William E.Perry , "Effective methods of software testing", rd3 Edition, John Wiley & Sons, 2006.
2. Illene Burnstein, " Practical software testing – a process oriented approach", Springer Internationatl,E1dition, 2003
3. Louise Tamres, " Introduction to software testing", Pearson Education, 2002
4. Boris Beizer , "Software testing techniques", International Thomson Computer Pressn,d2Edition, 1990
5. Roger S.Pressman, "Software Engineering, A practitioner's approach", Tata McGraw Hillt,h 5Edition, 2001.
6. Marc Roper , "Software testing", McGraw Hill, 1994

END SEMESTER EXAM QUESTION PAPER PATTERN

Max. Marks : 100

PART A : 10 questions of 2 marks each - No choice

PART B : 2 questions from each unit of internal choice, each carrying 16 marks

Exam Duration : 3 Hrs.

20 Marks

80 Marks



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SCHOOL OF COMPUTING
DEPARTMENT OF INFORMATION TECHNOLOGY
STUDENT CIRCULAR 2014 BATCH

03.12.2016

This is to inform you that it is mandatory to select Two elective subjects for the VI semester of Academic year 2016-2017 based on your area of interest. You can select any two of the following subjects

1. SCSX1030 – Data Mining and Data Warehousing
2. SCSX1038 – Software Quality Assurance and Testing
3. SCSX1033 – Natural Language Processing

Confirm the elective Confirm the elective subject through your counselors to the HOD on or before
11-12-2016

HOD-IT
(Dr.R.Subhashini)

SCSX1030	DATAMINING AND WAREHOUSING (Common to CSE, IT & BIOINFO)	L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT I DATA MINING

10 hrs.

Introduction – Data – Types of data – Data mining functionalities – Interestingness of patterns – Classification of data Mining systems – Data mining task primitives – Integration of a data mining system with a data warehouse
– Issues –Data preprocessing.

UNIT II ASSOCIATION RULE MINING AND CLASSIFICATION

10 hrs.

Mining frequent patterns – Associations and correlations – Mining methods – Mining various kinds of association rules – Correlation analysis – Constraint based association mining – Classification and prediction – Basic concepts – Decision tree – Induction – Bayesian classification – Rule based classification – Classification by backpropagation – Support vector machines – Associative classification – Lazy learners – Other classification methods – Prediction.

UNIT III CLUSTERING, APPLICATIONS AND TRENDS IN DATA MINING

10 hrs.

Cluster analysis – Types of data – Categorization of major clustering methods – Kmeans – Partitioning methods
– Hierarchical methods –Density-based methods –Grid-based methods – Model-based clustering methods – Clustering high dimensional data – Constraint Based cluster analysis – Outlier analysis – Data mining applications.

UNIT IV DATA WAREHOUSING

10 hrs.

Data warehousing components – Building a data warehouse – Mapping the data warehouse to a multiprocessor architecture – DBMS schemas for decision support – Data extraction – Cleanup and transformation tools – Metadata.

UNIT V BUSINESS ANALYSIS

10 hrs.

Reporting and query tools and applications – Tool categories – The need for applications – Cognos
Impromptu– Online Analytical Processing (OLAP) – Need – Multidimensional data model – OLAP guidelines – Multidimensional versus multirelational OLAP – Categories of tools – OLAP tools and the internet.

REFERENCE BOOKS

1. Alex Berson and Stephen J. Smith, "Data Warehousing, Data Mining & OLAP", Tata McGraw Hill, 2007.
2. Jiawei Han and Micheline Kamber, "Data Mining Concepts and Techniques"nd Edition, Elsevier, 2007.
3. Pang-Ning Tan, Michael Steinbach and Vipin Kumar, "Introduction To Data Mining", Person Education, 2007.
4. K.P. Soman, Shyam Diwakar and V. Ajay, "Insight into Data mining Theory and Practice", Easter Economy Edition, Prentice Hall of India, 2006.
5. G. K. Gupta, "Introduction to Data Mining with Case Studies", Easter Economy Edition, Prentice Hall of India, 2006.
6. Daniel T.Larose, "Data Mining Methods and Models", Wile-Interscience, 2006.

UNIVERSITY EXAM QUESTION PAPER PATTERN

Max Marks : 80

Exam Duration : 3 hrs.

Part A: 2 Questions from each unit, each carrying 2 marks 20 Marks
Part B: 2 Questions from each unit with internal choice, each carrying 12 marks 60 Marks

Name List: Data Mining and Data Warehousing

Reg.No	NAME
3412003	ADITYA SHANKAR
3412004	AJAY GUPTA
3412009	AKSHAY TIWARI
3412011	AKSHAYA R
3412013	ANDENA SONIA
3412019	ASHISH ANAND
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3412064	JAGADISH H
3412065	JAITHOONNISHA A
3412067	JEBAS EBANAZER I B
3412069	JENIFA ANNIE A
3412070	JENILA JOSME J
3412072	SHYAM PRAKASH REDDY K
3412073	TEJASWINI K
3412076	KAZA YASHASWINI RAVISANKAR
3412077	KEERTHI V S
3412078	KEERTHIPATI VANDANA
3412079	KELITA KATYLIN J B
3412080	KHAN AFZAL AYUB
3412083	KONDLE DIVYAPRIYA
3412086	SESHA MANAS
3412091	GAYATHRI PRATHYUSHA LAKHIMSETTY
3412092	LAKKIMSETTY JAGRUTHI HYMA
3412093	LIJO JOY
3412094	LOKESH KUMAR B
3412095	MD AMIR
3412096	SANTHOSH M

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3412703	SWEETHY SHARMA

SCSX1038	SOFTWARE QUALITY ASSURANCE AND TESTI (Common to CSE & IT)	NG L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT I INTRODUCTION

10 hrs.

Software quality- Role of testing – Software testing fundamentals - Verification and validation- Testing principles- Objectives and issues of testing – Testing lifecycle.

Test process – Testing activities –11 steps of test process(only steps) – How does test information flows? – Test cases – What it is?(Concept & introduction) – Test case selection – Test planning and design – Monitoring and measuring test execution – Test tools and automation.

UNIT II LEVELS AND TYPES OF TESTING

10 hrs.

Levels – Unit testing – Intergration testing – System testing – Acceptance testing – Alpha testing & beta testing – Manual vs automated testing – Testers workbench.

Types – Installation testing – Usability testing – Regression testing – Performance testing – Load testing – Stress testing – Security testing.

Testing specialized systems and applications – Testing object oriented software – Testing web based applications – Computer aided software testing tools (CAST) (only concepts and types need to be discussed).

UNIT III SOFTWARE TESTING METHODS AND STRATEGIES

10 hrs.

Static vs dynamic testing – Static testing techniques – Review types – Informal reviews – Walkthrough-Inspection – Static analysis – Dynamic testing – Need & advantages – White box(structural) testing – Flow graph notation – Cyclomatic complexity analysis – Deriving test cases – Data flow analysis – Control structure testing – Black box(functional) testing – Equivalence partitioning – BVA – Cause effect graphing – Syntax testing – Deriving test cases.

Defects – Defect tracking – recording, reporting – defect cause analysis – defect classes.

UNIT IV SOFTWARE QUALITY CONSIDERATIONS

10 hrs.

Quality assurance vs quality control – Quality factors – McCall's – FURPS-ISO 9126 – Quality metrics – Process improvement – The SEI process capability maturity model – TMM – ISO – Six sigma.

UNIT V SOFTWARE QUALITY ASSURANCE

10 hrs.

Need for SQA – SQA activities – Building blocks of SQA – SQA planning & standards – Reliability measures.

REFERENCE BOOKS:

1. William E. Perry, "Effectivemethodsofsoftwaretesting", 1st Edition, John Wiley & Sons, 2006.
2. Illene Burnstein, "Practicalsoftwaretesting—aprocessororientedapproach", Springer International, 1st Edition, 2003
3. Louise Tamres, "Introductiontosoftwaretesting", Pearson Education, 2002
4. Boris Beizer, "Softwaretestingtechniques", International Thomson Computer Press, 2nd Edition, 1990
5. Roger S. Pressman, "SoftwareEngineering, A practitioner's approach", Tata McGraw-Hill, 5th Edition, 2001.
6. Marc Roper, "Softwaretesting", McGraw-Hill, 1994

END SEMESTER EXAM QUESTION PAPER PATTERN

Max. Marks : 100

PART A : 10 questions of 2 marks each - No choice

PART B : 2 questions from each unit of internal choice, each carrying 16 marks

Exam Duration : 3 Hrs.

20 Marks

80 Marks

Name List: Software Quality Assurance and Testing

<u>Reg.No</u>	NAME
3412003	ADITYA SHANKAR
3412004	AJAY GUPTA
3412009	AKSHAY TIWARI
3412011	AKSHAYA R
3412013	ANDENA SONIA
3412019	ASHISH ANAND
3412023	BADRI VISHAL S
3412026	BOTTA DINESH
3412031	CHOWDAM SAIKIRAN
3412033	DASARI RAKESH
3412034	DEBALIKA CHATTERJEE
3412037	DEEPSIKHA SAHA
3412038	DEVI SINDUJA V
3412040	DIVVELA THARUN
3412041	DIVYASHREE R
3412045	EZHIL PRIYA B
3412046	GOWTHAMI G
3412048	GAJJALA VEERA SUDHAKARREDDY
3412050	GANTA JWALA VIDYA SREE
3412051	GAYATHRI S
3412052	GAYATHRI S
3412054	GLADIA LIDIA RANJITHAM A
3412056	GUNAA JOTHILINGAM M
3412058	GURU PRAKASH REDDY V
3412060	HARISH KRISHNAN R
3412062	K HEMANTH KUMAR
3412064	JAGADISH H
3412065	JAITHOONNISHA A
3412067	JEBAS EBANAZER I B
3412069	JENIFA ANNIE A
3412070	JENILA JOSME J
3412072	SHYAM PRAKASH REDDY K
3412073	TEJASWINI K
3412076	KAZA YASHASWINI RAVISANKAR
3412077	KEERTHI V S
3412078	KEERTHIPATI VANDANA
3412079	KELITA KATYLIN J B
3412080	KHAN AFZAL AYUB
3412083	KONDLE DIVYAPRIYA
3412086	SESHA MANAS
3412091	GAYATHRI PRATHYUSHA LAKHIMSETTY
3412092	LAKKIMSETTY JAGRUTHI HYMA
3412093	LIJO JOY
3412094	LOKESH KUMAR B
3412095	MD AMIR
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SCSX1033	NATURAL LANGUAGE PROCESSING (Common to CSE&IT)	L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT I INTRODUCTION

10hrs.

An outline of English syntax–Grammars and parsing–Features and Augmented Grammar.

UNIT II SYNTACTIC PROCESSING

10hrs.

Grammars for natural language–Toward efficient parsing–Ambiguity resolution–Statistical Methods.

UNIT III SEMANTIC INTERPRETATION

10hrs.

Semantic and logical form–Linking syntax and semantics–Ambiguity resolution–Other strategies for semantic interpretation–Scoping for interpretation of noun phrases.

UNIT IV CONTEXT AND WORLD KNOWLEDGE

10hrs.

Knowledge representation and reasoning–Local discourse context and reference.

UNIT V WORLD KNOWLEDGE AND SPOKEN LANGUAGE

10hrs.

Using world knowledge–Discourse structure –Defining conversational agent–An introduction to logic and model–Theoretic semantics–Symbolic computation–Speech recognition and spoken Language.

REFERENCE BOOKS:

1. James Allen, "Natural Language Understanding", 2nd Edition, Benjamin/Cummings Publishing Company Inc, 1995.
2. Vibhu O. Mittal, "Generating Natural language Descriptions with integrated Text and Examples", Lawrence Associates, 1999.
3. Wendy G. Lehnert, Martin. H. Ringle, "Strategies for NLP", Lawrence Associates, 1982.



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SCHOOL OF COMPUTING DEPARTMENT OF INFORMATION AND TECHNOLOGY

ACADEMIC YEAR 2016-2017_CBSCS



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SCHOOL OF COMPUTING
DEPARTMENT OF INFORMATION AND TECHNOLOGY

03.05.2016

CIRCULAR

Department of IT, hereby inform you that, we are inviting students from inter disciplinary programmes to Register for the CBCS courses, which is offered by us for the academic year JUNE 2016. The Course code and the Subject names are listed below. The last date of registration is 10/05/2016.

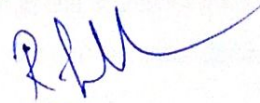
CBCS-CHOICE BASED CREDIT SYSTEM

<u>YEAR/SEMESTER</u> (offered in the Year/Sem by Soc)	<u>COURSE CODE</u>	<u>COURSE NAME</u>	<u>ELIGIBLE STUDENTS</u>
<u>III/IV</u>	SCSX1019	SYSTEM PROGRAMMING	<u>CSE, IT</u>
<u>IV/VIII</u>	SCSX1026	CRYPTOGRAPHY AND NETWORK SECURITY	<u>CSE,IT,ECE</u>

Kindly Fill up the Excel sheet with the required details Given.

S.No Name Regno. Student Name Branch Batch

Registered students name are reported to the respective department HOD and the Dean in due course for the Credit updation. The Syllabus for the Subjects is attached herewith for your reference. Kindly See your mail for further details


HOD-IT
(Dr.R.Subhashini)

SCSX1019	SYSTEM PROGRAMMING (Common to CSE & IT)	L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT I INTRODUCTION

10 hrs.

Assembler – Elements of ALP – Pass structure of assembler – Design of two pass assembler.

UNIT II MACROS & LINKERS

10 hrs.

Macro definition and call – Macro expansion – Nested macro call – Advanced macro facilities – Design of macro – Preprocessor – Relocation and linking concepts – Design of linker – Self relocating program – Loader – Absolute loader – RLL – DLL.

UNIT III COMPILERS

10 hrs.

Structure of compiler – Role of lexical analyzer – Regular expression – Finite automata – Regular expression to finite automata – Minimizing DFA – Context free grammar – Derivations – Parse trees – Capabilities of context free grammar.

UNIT IV PARSING

10 hrs.

Parser – Shift-Reduce parsing – Operator precedence parsing – Top down – Predictive parsing – Intermediate code – Postfix notation – Parse trees – Syntax trees – Three address code – Quadruples – Triple.

UNIT V OPTIMIZATION TECHNIQUES

10 hrs.

Principles of source of optimization – Loop optimization – DAG representation of basic block – Value number and algebraic laws – Global data flow analysis – Dominators – Reducible flow graph – Depth first search – Loop invariant computations – Induction variable elimination – Other loop optimization. .

REFERENCE BOOKS:

1. D M. Dhamdhere , “System Programming”, 2nd Edition, Tata McGraw Hill Publishing, 1999.
2. Alfred V.Aho, Jeffery D.Ullman & Ravi Sethi, ” Compiler Principles, Techniques & Tools”, Addison- Wesley Publishing Com,pany 1986.
3. Alfred V. Aho,Jeffery D. Ullman, “Principles of Compiler Design”, Narosa Publihing House,th15reprint, 1996.

UNIVERSITY EXAM QUESTION PAPER PATTERN

Max Marks : 80

Exam Duration : 3 hrs.

Part A: 2 Questions from each unit, each carrying 2 marks

20 Marks

Part B: 2 Questions from each unit with internal choice, each carrying 12 marks

60 Marks

SCSX1026	CRYPTOGRAPHY & NETWORK SECURITY (Common to CSE & IT)	L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT I INTRODUCTION

10 hrs.

Services – Mechanisms and attacks – The OSI security architecture – A model for network security – Classical encryption technique – Symmetric cipher model – Substitution technique – Rotar machines – Steganography.

UNIT II BLOCK CIPHERS AND THE DATA ENCRYPTION STANDARD (DES)

10 hrs.

Simplified DES – Block Cipher principles – The Data Encryption Standard – The strength of DES – Confidentiality using symmetric encryption – Placement of encryption – Traffic confidentiality – Key distribution – Random number generation.

UNIT III PUBLIC KEY ENCRYPTION AND KEY MANAGEMENT

10 hrs.

Introduction to number theory – Public key cryptography and RSA – Key management – Diffie-hellman key exchange.

UNIT IV AUTHENTICATION AND HASH FUNCTIONS

10 hrs.

Authentication requirements – Authentication functions – Message authentication codes – Hash functions – Security of hash functions and MAC'S – MD5 (Message Digest Algorithm) – HMAC.

UNIT V NETWORK SECURITY

10 hrs.

Network security and system Security – Electronic mail security – IP security – Web security – Intruders – Malicious S/Ws – Firewalls.

REFERENCE BOOKS:

1. William Stallings, "Cryptography and Network Security", 2nd Edition, Prentice Hall of India, New Delhi, 1999.
2. Bruce Schneier, "Applied Cryptography", 2nd Edition, John Wiley and Sons, 1996.
3. Douglas R. Stinson, "Cryptography- Theory and Practice", CRC Press, 1995.

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**SCHOOL OF COMPUTING
DEPARTMENT OF INFORMATION AND TECHNOLOGY**

04.12.2016

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<u>YEAR/SEMESTER</u> (offered in the Year/Sem by Soc)	<u>COURSE CODE</u>	<u>COURSE NAME</u>	<u>ELIGIBLE STUDENTS</u>
<u>III/VI</u> <u>IV/VIII</u>	SCSX1028	DISTRIBUTED COMPUTING	<u>CSE, IT</u>
<u>IV/VIII</u>	SCSX1029	SOFT COMPUTING	<u>CSE, IT, BIO-INFO</u>

Kindly Fill up the Excel sheet with the required details Given.

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HOD-IT
(Dr.R.Subhashini)

SCSX1028	DISTRIBUTED COMPUTING (Common to CSE & IT)	L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT I FUNDAMENTALS

10 hrs.

What is distributed computing systems – Evolution of distributed computing systems – Distributed computing system models – What is distributed operating system – Issues in designing distributed operating systems.

Message passing – Features of a good message-passing system – Issues in IPC by message passing – Synchronization – Buffering – Multidatagram messages – Encoding and decoding of message data – Failure handling

– Group communication.

UNIT II REMOTE PROCEDURE CALLS

10 hrs.

RPC Models – Transparency of RPC – Implementing RPC mechanism – Stub generation – RPC messages – Marshaling arguments & results – Server Management – Parameter-passing semantics – Call semantics – Communication protocols for RPCs – Complicated RPCs – Client server binding – Security – Special types of RPCs

– Light weight RPC.

UNIT III DISTRIBUTED SHARED MEMORY

10 hrs.

General architecture of DSM systems – Design & implementation issues of DSM – Granularity – Structure of shared memory space – Consistency models – Replacement strategy – Thrashing – Heterogeneous DSM – Advantages of DSM.

UNIT IV SYNCHRONIZATION AND MANAGEMENT

10 hrs.

Synchronization – Clock synchronization – Mutual exclusion – Election algorithms – Deadlocks. – Resource Management – Task assignment approach – Load balancing approach – Load sharing approach – Process Management – Process migration – Threads.

UNIT V DISTRIBUTED FILE SYSTEMS

10 hrs.

Desirable features of a good distributed file systems – File models – File accessing models – File sharing semantics – File caching schemes – File replications – Fault tolerance – Atomic transaction.

REFERENCE BOOKS:

1. Pradeep K Sinha, "Distributed Operating Systems, Concepts & Design", Prentice Hall of India, 2009.
2. Andrew S. Tanenbaum, "Distributed Operating Systems", 1st Edition, Prentice Hall of India, 1995.
3. Andrew S. Tanenbaum, and Steen, Maarten van, "Distributed Systems", 2nd Edition, Prentice Hall of India, 2007.

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Max Marks : 80

Exam Duration : 3 hrs.

Part A: 2 Questions from each unit, each carrying 2 marks

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60 Marks

SCSX1029	SOFT COMPUTING (Common to CSE, IT & BIOINFO)	L	T	P	Credits	Total Marks
		3	0	0	3	100

UNIT I NEURAL NETWORKS

10 hrs.

Introduction to ANS – Adaline – Back propagation network – Hopfield network – Boltzman machine – Self organizing maps.

UNIT II FUZZY LOGIC

10 hrs.

Fuzzy sets – Fuzzy rules and fuzzy reasoning – Fuzzy inference system – Mamdani fuzzy model – Sugeno fuzzy model – Tsukamoto fuzzy model.

UNIT III NEURO FUZZY

10 hrs.

Adaptive Neuro Fuzzy Inference System – Coactive neuro-fuzzy modelling – Classification and regression trees
– Data Clustering Algorithm – Rule based structure – Neuro - Fuzzy control I – Neuro -Fuzzy control II – Fuzzy decision making. .

UNIT IV GENETIC ALGORITHM

10 hrs.

Introduction – Implementation of GA – Reproduction – Crossover – Mutation – Coding – Fitness scaling – Application of GA.

UNIT V ARTIFICIAL INTELLIGENCE

10 hrs.

Introduction – Searching techniques – First order Logic – Forward reasoning – Backward reasoning – Semantic
– Frames.

REFERENCE BOOKS:

1. James A.Freeman, David M. Skapura, "Neural Networks, Algorithms, Applications and Programming Techniques ", Pearson Edunc,atio 1991.
2. George.J.Klir, Bo Yuan , "Fuzzy Sets and Fuzzy Logic – Theory and Application", 1995.
3. J.S.R.Jang, C.T.Sun, E-Mizutani, "Neuro – Fuzzy and Soft Computing ", Prentice Hall of India, 1997.
4. David E. Goldberg, "Genetic Algorithms – In Search, Optimization and Machine Leraning ", Pearson Education, 2005.
5. Stuart J.Russel, Peter Norvig , "Artificial Intelligence A Modern Approach "n, d2Edition, Pearson Education, 2003.

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