<table>
<thead>
<tr>
<th>Code</th>
<th>III B. Tech II Semester (VI Semester)</th>
<th>Theory</th>
<th>L</th>
<th>T</th>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>A0522</td>
<td>Compiler Design</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>A0523</td>
<td>Computer Networks</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>A0524</td>
<td>Data Warehousing &amp; Data Mining</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>A0525</td>
<td>Cloud Computing</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skill Development(Discipline Centric)</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>A0015</td>
<td>Managerial Economics &amp; Financial Analysis</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>A0506-A0512</td>
<td>Open Elective</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Practice</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A0592</td>
<td>Network Programming Lab</td>
<td>-</td>
<td>-</td>
<td>4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>A0593</td>
<td>DWDM Lab</td>
<td>-</td>
<td>-</td>
<td>4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>A0600</td>
<td>Cloud Computing and Virtualization Lab</td>
<td>-</td>
<td>-</td>
<td>4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25</td>
</tr>
</tbody>
</table>
COMPILER DESIGN

Course Objectives: To make the student to understand the process involved in a compiler, create an overall view of various types of translators, linkers, loaders, and phases of a compiler, understand what is syntax analysis, various types of parsers especially the top down approach, awareness among students the various types of bottom up parsers, understand the syntax analysis and, intermediate code generation, type checking, the role of symbol table and its organization, Code generation, machine independent code optimization and instruction scheduling.

Course Outcome

1. To introduce the major concept areas of language translation and compiler design
2. To develop an awareness of the function and complexity of compilers.
3. To provide practical, hands on experience in compiler design
4. Identify the similarities and differences among various parsing techniques and grammar transformation techniques

Unit-I:


Unit-II
Syntax Analysis – discussion on CFG, LMD, RMD, parse trees, Role of a parser – classification of parsing techniques

– Brute force approach, left recursion, left factoring, Top down parsing – First and Follow-LL(1) Grammars, Non- Recursive predictive parsing – Error recovery in predictive parsing.

UNIT-III

What is bottom up parsing approach, Types of Bottom up approaches; Introduction to simple LR – Why LR Parsers – Model of an LR Parsers – Operator Precedence- Shift Reduce Parsing – Difference between LR and LL Parsers, Construction of SLR Tables.

More powerful LR parses, construction of CLR (1), LALR Parsing tables, Dangling ELSE Ambiguity, Error recovery in LR Parsing. Comparison of all bottoms up approaches with all top down approaches

UNIT-IV

Semantic analysis, SDT Schemes, evaluation of semantic rules. Intermediate code, three address code, quadruples, triples, abstract syntax trees. Types and declarations, type Checking.

UNIT-V

Symbol tables: use and need of symbol tables. Runtime Environment: storage organization, stack allocation, access to non-local data, heap management, parameter passing mechanisms, introduction to garbage collection. Reference counting garbage collectors.


UNIT-VI

Machine independent code optimization – semantic preserving transformations, global common sub expression elimination, copy propagation, dead code elimination, constant folding, strength reduction, loop optimization. Instruction scheduling, inter procedural optimization.

TEXT BOOKS


REFERENCE BOOKS


4. Compiler construction, Principles and Practice, Kenneth C Louden, CENGAGE

5. Implementations of Compiler, A new approach to Compilers including the algebraic methods, Yunlinsu, SPRINGER
UNIT – I:

Introduction: OSI overview, TCP/IP and other networks models, Examples of Networks: Novell Networks, Arpanet, Internet, Network Topologies WAN, LAN, MAN.

UNIT – II:

Physical Layer and overview of PL Switching: Multiplexing: frequency division multiplexing, wave length division multiplexing, synchronous time division multiplexing, statistical time division multiplexing, introduction to switching: Circuit Switched Networks, Datagram Networks, Virtual Circuit Networks.

UNIT – III:

Data link layer: Design issues, Framing: fixed size framing, variable size framing, flow control, error control, error detection and correction, CRC, Checksum: idea, one’s complement internet checksum, services provided to Network Layer, Elementary Data Link Layer protocols: simplex protocol, Simplex stop and wait, Simplex protocol for Noisy Channel. Sliding window protocol: One bit, Go back N, Selective repeat-Stop and wait protocol, Data link layer in HDLC: configuration and transfer modes, frames, control field, point to point protocol (PPP): framing transition phase, multiplexing, multi link PPP.

UNIT – IV:

Random Access: ALOHA, Carrier sense multiple access (CSMA), CSMA with Collision Detection, CSMA with Collision Avoidance, Controlled Access: Reservation, Polling, Token Passing, Channelization: frequency division multiple access(FDMA), time division multiple access(TDMA), code division multiple access(CDMA).

UNIT – V:


UNIT – VI:
**Transport Layer:** Services provided to the upper layers elements of transport protocol-addressing connection establishment, connection release, Connection Release, Crash Recovery.


**TEXT BOOKS:**

1. Data Communications and Networks – Behrouz A. Forouzan.Third Edition TMH.
2. Computer Networks, 5ed, David Patterson, Elsevier
4. Computer Networks, Mayank Dave, CENGAGE

**REFERENCES:**

2. Understanding communications and Networks, 3rd Edition, W.A. Shay, Thomson
DATAMINING AND DATAWAREHOUSING

UNIT –I:
Introduction: What Motivated Data Mining? Why Is It Important, Data Mining—On What Kind of Data, DataMining Functionalities—What Kinds of Patterns Can Be Mined? Are All of the Patterns Interesting? Classification of Data Mining Systems, Data Mining Task Primitives, Integration of a Data Mining System with a Database or Data Warehouse System, Major Issues in Data Mining. (Han & Kamber)

UNIT –II:
Data Pre-processing: Why Pre-process the Data? Descriptive Data Summarization, Data Cleaning, Data Integration and Transformation, Data Reduction, Data Discretization and Concept Hierarchy Generation. (Han & Kamber)

UNIT –III:
Data Warehouse and OLAP Technology: An Overview: What Is a Data Warehouse? A Multidimensional Data Model, Data Warehouse Architecture, Data Warehouse Implementation, From Data Warehousing to Data Mining. (Han & Kamber)

UNIT –IV:
Classification: Basic Concepts, General Approach to solving a classification problem, Decision Tree Induction: Working of Decision Tree, building a decision tree, methods for expressing an attribute test conditions, measures for selecting the best split, Algorithm for decision tree induction. evaluating the performance of classifier: holdout method, random sub sampling, cross-validation, bootstrap. (Tan & Vipin)

UNIT –V:
Association Analysis: Basic Concepts and Algorithms: Introduction, Frequent Item Set generation, Rule generation, compact representation of frequent item sets, FP-Growth Algorithm. (Tan & Vipin)

UNIT –VI:
Text Books:
1. Introduction to Data Mining: Pang-Ning Tan & Michael Steinbach, Vipin Kumar, Pearson.
2. Data Mining concepts and Techniques, 3/e, Jiawei Han, Michel Kamber, Elsevier.

Reference Books:
2. Data Mining: Introductory and Advanced topics: Dunham, Pearson.
3. Data Warehousing Data Mining & OLAP, Alex Berson, Stephen Smith, TMH.
CLOUD COMPUTING

Course Objectives:
The student will learn about the cloud environment, building software systems and components that scale to millions of users in modern internet, cloud concepts capabilities across the various cloud service models including IaaS, PaaS, SaaS, and developing cloud based software applications on top of cloud platforms.

Course Outcomes:
1. Understanding the key dimensions of the challenge of Cloud Computing
2. Assessment of the economics, financial, and technological implications for selecting cloud computing for own organization
3. Assessing the financial, technological, and organizational capacity of employer’s for actively initiating and installing cloud-based applications.
4. Assessment of own organizations’ needs for capacity building and training in cloud computing-related IT areas

UNIT I: Systems modeling, Clustering and virtualization:
Scalable Computing over the Internet, Technologies for Network based systems, System models for Distributed and Cloud Computing, Software environments for distributed systems and clouds, Performance, Security And Energy Efficiency

UNIT II: Virtual Machines and Virtualization of Clusters and Data Centers:
Implementation Levels of Virtualization, Virtualization Structures/ Tools and mechanisms, Virtualization of CPU, Memory and I/O Devices, Virtual Clusters and Resource Management, Virtualization for Data Center Automation.

UNIT III: Cloud Platform Architecture:

UNIT IV: Cloud Programming and Software Environments:

UNIT V: Cloud Resource Management and Scheduling:

UNIT VI:
Storage Systems: Evolution of storage technology, storage models, file systems and database, distributed file systems, general parallel file systems. Google file system., Apache Hadoop, Big Table, Megastore, Amazon Simple Storage Service(S3)

TEXT BOOKS:

REFERENCE BOOK:
MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS

UNIT I Introduction to Managerial Economics:

Elasticity of Demand:
Definition, Types, Measurement and Significance of Elasticity of Demand. Demand Forecasting, Factors governing demand forecasting, methods of demand forecasting (survey methods, statistical methods, expert opinion method, test marketing, controlled experiments, judgmental approach to demand forecasting)

UNIT II
Theory of Production and Cost Analysis:
Production Function – Isoquants and Isocosts, MRTS, Least Cost Combination of Inputs, Cobb-Douglas Production function, Laws of Returns, Internal and External Economies of Scale.
Cost Analysis: Cost concepts, Opportunity cost, Fixed vs. Variable costs, Explicit costs Vs. Implicit costs, Out of pocket costs vs. Imputed costs. Break-even Analysis (BEA)-Determination of Break-Even Point (simple problems)- Managerial Significance and limitations of BEA.

UNIT III
Introduction to Markets & Pricing Policies:
Market structures: Types of competition, Features of Perfect competition, Monopoly and Monopolistic Competition. Price-Output Determination in case of Perfect Competition and Monopoly.

UNIT IV
Business & New Economic Environment:

UNIT V
Capital and Capital Budgeting:
Capital and its significance, Types of Capital, Estimation of Fixed and Working capital requirements, Methods and sources of raising finance.
Nature and scope of capital budgeting, features of capital budgeting proposals, Methods of Capital Budgeting: Payback Method, Accounting Rate of Return (ARR) and Net Present Value
Method (simple problems)

UNIT VI

Financial Analysis through ratios:
Computation, Analysis and Interpretation of Liquidity Ratios (Current Ratio and quick ratio), Activity Ratios (Inventory turnover ratio and Debtor Turnover ratio), Capital structure Ratios (Debt- Equity ratio, Interest Coverage ratio), and Profitability ratios (Gross Profit Ratio, Net Profit ratio, Operating Ratio, P/E Ratio and EPS).

TEXT BOOKS:


REFERENCES:

3. Suma Damodaran, Managerial Economics, Oxford University Press.
### III Year - II SEMESTER

<table>
<thead>
<tr>
<th></th>
<th>L</th>
<th>T</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

**OPEN ELCTIVE**
III Year – II SEMESTER

<table>
<thead>
<tr>
<th>L</th>
<th>T</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

SKILL DEVELOPMENT
1. Implement the following forms of IPC.
   a) Pipes  b) FIFO
2. Implement file transfer using Message Queue form of IPC
3. Write a programme to create an integer variable using shared memory concept and increment
   the variable simultaneously by two processes. Use semaphores to avoid race conditions
4. Design TCP iterative Client and server application to reverse the given input sentence
5. Design TCP iterative Client and server application to reverse the given input sentence
6. Design TCP client and server application to transfer file
7. Design a TCP concurrent server to convert a given text into upper case using multiplexing system call “select”
8. Design a TCP concurrent server to echo given set of sentences using poll functions
9. Design UDP Client and server application to reverse the given input sentence
10. Design UDP Client server to transfer a file
11. Design using poll client server application to multiplex TCP and UDP requests for converting a given text into upper case.
12. Design a RPC application to add and subtract a given pair of integers
DATA MINING & DATA WARE HOUSING LAB

1. Demonstration of preprocessing on dataset student.arff
2. Demonstration of preprocessing on dataset labor.arff
3. Demonstration of Association rule process on dataset contactlenses.arff using apriori algorithm
4. Demonstration of Association rule process on dataset test.arff using apriori algorithm
5. Demonstration of classification rule process on dataset student.arff using j48 algorithm
6. Demonstration of classification rule process on dataset employee.arff using j48 algorithm
7. Demonstration of classification rule process on dataset employee.arff using id3 algorithm
8. Demonstration of classification rule process on dataset employee.arff using naïve bayes algorithm
9. Demonstration of clustering rule process on dataset iris.arff using simple k-means
10. Demonstration of clustering rule process on dataset student.arff using simple k-means
CLOUD COMPUTING AND VIRTUALIZATION LAB

1. Installation & Configuration of Oracle Virtual box for windows xp & android.
2. Installation Configuration of Hadoop.
3. Installation and Configuration of Just cloud.
4. Working in Cloud9 to demonstrate different language.
5. Working in Cod envy to demonstrate Provisioning and Scaling of a website.
6. Installation and Configuration of Hadoop/Eucalyptus
7. Working and installation of Google App Engine
8. Working and installation of Microsoft Azure
9. Working with Mangrasoft Aneka Software
10. Using Hadoop for counting word frequency with map reduce.
11. Service deployment research & uses over cloud- Google app &Amazon web services.
13. Performance evaluation of services over cloud- Google App &Amazon web services.