PRASAD V. POTLURI SIDDHARTHA INSTITUTE OF TECHNOLOGY KANURU, VIJAYAWADA

Department of Computer Science and Engineering

III B.Tech – I Semester

20CS3503/20IT3503 **COMPUTER NETWORKS(PVP20)**

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| **CO** | **Statement** | **Skill** | **Blooms** | **Units** |
| **CO1** | Understand the basic concepts and protocols of different layers. | Understand | L2 | 1, 2,3,4,5 |
| **CO2** | Apply Error Correction or MAC Protocol mechanism for a given scenario. | Apply | L3 | 1 |
| **CO3** | Apply various Addressing mechanisms /Routing protocols for a given network. | Apply | L3 | 2,3 |
| **CO4** | Apply appropriate Transport & Application layer protocol for a given context. | Apply | L3 | 4,5 |
| **CO5** | Analyze the given scenario and use appropriate methods/mechanisms/protocols for designing a network. | Analyze,  Individual Performance, Communication | L4 | 2,3,4 |

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| **COMPUTER NETWORKS** | | |
| **Unit No.** | **Contents** | **Mapped CO** |
| I | **Introduction :-**Networks, Network Types, Network Models :-The Protocol Layering , TCP/IP Protocol Suite, The OSI Model,  **Physical Layer :-**Transmission Media - Guided Media, Un-Guided Media  **Data-Link Layer:** Introduction to Data-Link Layer - Introduction, Link-Layer Addressing. Error Detection and Correction - Introduction, Cyclic Redundancy Check. Data Link Control (DLC) - DLC Services. Media Access Control (MAC) - Random Access, Controlled Access. | CO1, CO2 |
| II | **Network Layer:** Introduction to Network Layer - Network-Layer Services, Packet Switching, Network-Layer Performance, IPv4 Addresses  **Next Generation IP-** IPv6 Addressing, The IPv6 Protocol | CO1, CO3, CO5 |
| III | **Network-Layer Protocols -** Internet Protocol (IP), Unicast Routing - Introduction, Routing Algorithms- Distance vector and Link State Routing, Unicast Routing Protocols. | CO1, CO3, CO5 |
| IV | **Transport Layer:** Introduction to Transport Layer-Introduction, Transport-Layer Protocols. Transport Layer Protocols-Introduction, User Datagram Protocol(UDP), Transmission Control Protocol(TCP) | CO1, CO4, CO5 |
| V | **Application Layer:** Standard Client-Server Protocols-World Wide Web and HTTP, FTP, Electronic Mail, Telnet, Secure Shell (SSH), Domain Name System (DNS) | CO1, CO4 |

**CO-PO Mapping**

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| **Contribution of Course Outcomes towards achievement of Program Outcomes** | | | | | | | | | | | | | | |
|  | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **CO1** | **√** |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO2** | **√** |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO3** | **√** |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO4** |  |  |  |  |  |  |  |  |  |  |  |  | **√** |  |
| **CO5** |  | **√** |  |  |  |  |  |  | **√** | **√** |  |  |  |  |

**Strength of Correlation**

Distribution of marks weightage to PO’s through CO’s.

* The strength of correlation levels is based on percentage of marks distribution towards PO.

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| CIE | **Test** | **Test Number** | **Marks** |
| Objective Exam (10) | Objective Exam -1 | 10 |
| Objective Exam -2 | 10 |
| Assignment (5) | Assignment -1 | 5 |
| Assignment - 2 | 5 |
| Descriptive Exam (15) | Descriptive Exam - 1 | 15 |
| Descriptive Exam - 2 | 15 |

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| **CO** | **Skill** | **Blooms** | **Units** | **Assessing Tools can be used to measure CO (CIE)**  **Marks** | **Assessing Tools can be used to measure CO (SEE)**  **Marks** |
| CO1 | Understand | L2 | 1, 2,3,4,5 | Objective Exam -10  Descriptive Exam - 1 | 14 |
| CO2 | Apply | L3 | 1 | Descriptive Exam – 1.5 | 14 |
| CO3 | Apply | L3 | 2,3 | Descriptive Exam – 7.5 | 14 |
| CO4 | Apply | L3 | 4,5 | Descriptive Exam - 5 | 14 |
| CO5 | Analyse,  Individual Performance, Communication | L4 | 2,3,4 | Assignment -5 | 14 |

**Strength of Correlation**

|  |  |
| --- | --- |
| **% of questions towards PO** | **Level (Weight)** |
| >=20% of total marks | 3 |
| >=10% and <20% of total marks | 2 |
| < 10% of total marks | 1 |

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| **CO** | **Skill** | **Bloom's** | **Units** | **Assessing tools can be used to measure CO (CIE) Marks** | **CIE-Total** | **Assessing tools can be used to measure CO (SEE) Marks** | **Total (CIE+SEE)** | **Percentage (%)** | **Strength of Correlation** | **PO/PSO** |
| **CO1** | Understand | L2 | 1, 2,3,4,5 | Objective Exam -10  Descriptive Exam - 1 | 11 | 14 | 25 | 25 | 3 | PO1 |
| **CO2** | Apply | L3 | 1 | Descriptive Exam –1.5 | 1.5 | 14 | 15.5 | 15.5 | 2 | PO1 |
| **CO3** | Apply | L3 | 2,3 | Descriptive Exam –7.5 | 7.5 | 14 | 21.5 | 21.5 | 2 | PO1 |
| **CO4** | Apply | L3 | 4,5 | Descriptive Exam - 5 | 5 | 14 | 19 | 19 | 2 | PSO1 |
| **CO5** | Analyze,  Individual Performance, Communication | L4 | 2,3,4 | Assignment -5 | 3  1  1 | 14  1  1 | 17  1  1 | 19 | 2  1  1 | PO2,  PO9,  PO10 |

**Course Articulation Matrix:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:Substantial, 2: Moderate, 1:Slight)** | | | | | | | | | | | | | | |
|  | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| **CO1** | 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO2** | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO3** | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO4** |  |  |  |  |  |  |  |  |  |  |  |  | 2 |  |
| **CO5** |  | 2 |  |  |  |  |  |  | 1 | 1 |  |  |  |  |
| **Average** | 2 | 2 |  |  |  |  |  |  | 1 | 1 |  |  | 2 |  |