A screenshot of a cell phone

Description generated with very high confidence

**Course Plan**

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| **Department :** | Data Science And Computer Applications |
| **Course Name & code :** | Network Lab & MCA 5143 |
| **Semester & branch :** | III & M.C.A. |
| **Name of the faculty :** | Vinayak Mantoor , Nirmal Kumar Nigam & Archana.H |
| **No of contact hours/week:** | |  |  |  |  | | --- | --- | --- | --- | | **L** | **T** | **P** | **C** | | 0 | 0 | 3 | 1 | |

**Course Outcomes (COs)**

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|  | ***At the end of this course, the student should be able to:*** | **No. of Contact Hours** | **Marks** |
| CO1: | Implement Inter-process Communication between Processes | 12 | 36 |
| CO2: | Implement Socket Programming using C & Unix. | 9 | 27 |
| CO3: | Construct network with connecting devices- switch, hub & routers and understand the working of different topologies | 6 | 18 |
| CO4: | Construct networks using RIP and simulate application protocols- DHCP, HTTP & FTP | 6 | 18 |
| CO5: | Click or tap here to enter text. | Hrs. | Marks |
|  | **Total** | 33 | 100 |

**Assessment Plan**

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| 1. **Continuous Evaluation** | **INTERNAL EVALUATIONS : 60 MARKS (60%)** |
| CO1 & CO2 20 marks – MidTerm Evaluation 2 Evaluations each of 20 marks – Observation book(6)+Execution(7)+Quiz(7) | |
| 1. **Lab Examination** | FINAL EXAMINATION:40% |
| * Examination of 3 hours duration that includes questions based on: CO1-CO4 Max.Marks:40 | |

**Lesson Plan**

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| **L. No.** | **Topics** | **Course Outcome Addressed** |
| **L1** | Review of Linux system calls:open(), close(), read(), write(), creat(), fork(), wait(). | CO1 |
| **L2** | Interprocess Commmunication using Pipes. | CO1 |
| **L3** | Interprocess Commmunication FIFOs | CO1 |
| **L4** | Interprocess Communication using Message Queue | CO1 |
| **L5** | Socket Programming - Simple TCP | CO2 |
| **L6** | Socket Programming - Simple UDP | CO2 |
| **L7** | Socket Programming – multi client | CO2 |
| **L8** | Construct a 3 or more node network by connecting a hub and switch and realize the working of hub & switch (using Simulation Tool). | CO3 |
| **L9** | Implement different network design topologies like Bus, Star, Ring and transfer the data packet from one PC to another PC. (using Simulation Tool). | CO3 |
| **L10** | Connect two or more networks by configuring router, nodes with RIP protocol. Simulate the communication within and between networks. (using Simulation Tool). | CO4 |
| **L11** | Construct simple networks to simulate the application protocols- HTTP,FTP and DHCP. (using Simulation Tool). | CO4 |
| **L12** | FINAL LAB EXAM | CO |
| **L13** | Click or tap here to enter text. | CO |
| **L14** | Click or tap here to enter text. | CO |

**References:**

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| --- | --- |
| 1. | W.Richard Stevens, “UNIX Network Programming Interprocess Communications”, Volume 2, Second Edition,Pearsson Education, 2001. |
| 2. | A Rama Satish, “UNIX Programming”, Scitech Publications, 2009 |
| 3. | Douglas E Comer, David L Stevens, “Internetworking with TCP/IP-Volume III” Pearson Education, Second Edition, 2004 |
| 4. | Jesin A, Packet Tracer Network Simulator (1e), Packt Publishing, 2014. |
| 5. | Stevens R., Stephen A. R., Advanced Programming in the UNIX Environment (2e), Pearson Education, 2013. |
| 6. | Click or tap here to enter text. |
| 7. | Click or tap here to enter text. |

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| **Submitted by:** | Vinayak Mantoor Nirmal Kumar Nigam & Archana.H |

**(Signature of the faculty)**

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| **Date:** | 22-07-2024 |

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| **Approved by:** | Dr.Radhika M Pai |

**(Signature of HOD)**

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| **Date:** | 02-07-2024 |

**Faculty members teaching the course (IF MULTIPLE sections EXIST):**

|  |  |  |  |
| --- | --- | --- | --- |
| **FACULTY** | **Section** | **FACULTY** | **Section** |
| Vinayak Mantoor |  | Archana.H |  |
| Nirmal N Nigam |  |  |  |
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