**Detailed Syllabus**

Lab-wise Breakup

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| **Course Code** | 15B17CI579 | **Semester** Odd  **(specify Odd/Even)** | | **Semester** 5th (ECE) **Session** 2019 -2020 Month from Jul-Dec | |
| **Course Name** | UNIX Programming Lab | | | | |
| **Credits** | 1 | | **Contact Hours** | | 2 per week (Total 14 weeks) |

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| **Faculty (Names)** | **Coordinator(s)** | Dr. Chetna Dabas (Sec- 62) & Dr Shailesh (Sec-128) |
| **Teacher(s) (Alphabetically)** | Charu Gandhi, Devpriya Soni Krishna Asawa, Mukta Goyal, Shailesh Kumar Swati Gupta |

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| **COURSE OUTCOMES** | | **COGNITIVE LEVELS** |
| **C373.1** | Demonstrate use of common Unix/Linux commands | Understanding Level  (Level 2) |
| **C373.2** | Apply Unix/Linux file redirection and pipelining to combine utilities to perform complex tasks | Apply Level  (Level 3) |
| **C373.3** | Develop shell scripting using Selection, Case & Conditional Statements | Apply Level  (Level 3) |
| **C373.4** | Build shell scripts to solve various problems using commands like grep, line number, test, expressions, compare, command line input, etc. | Apply Level  (Level 6) |
| **C373.5** | Create and manage files and directories, file permissions, and navigate the Unix/Linux file system | Create Level  (Level 6) |

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| **Module No.** | **Title of the Module** | **List of Experiments** | **CO** |
| **1.** | The UNIX File System & Basic Commands | History of UNIX, Introduction, UNIX file system, Executing commands & options | CO1 |
| **2.** | UNIX Editor & Operations | UNIX Processes, Process Utilities, Pipes and Signals | CO2 |
| **3.** | UNIX File Handling & Regular Expressions | File Handling, File commands, Basic Filters (cat, head, tail, sort, uniq), Use of Regular Expressions, Field Matching, grep, fgrep, egrep | CO2 |
| **4.** | UNIX Advanced Filters | Advanced Pattern Matching, Stream-oriented & Non-Interactive Text Editor (Sed), Programmable Filters, Awk, Gnu Awk (Gawk), Text Processing, Practical Extraction and Report Language (Perl) | CO3 |
| **5.** | UNIX Shell Scripting | UNIX Scripting, Variables, Naming Conventions, Conditional Constructs, Looping Statements, Arrays, Functions, Document Handling, Quoting, Arithmetic Operations & Executions, Parsing | CO4 |
| **6.** | UNIX Administration | UNIX Administration, Overview of Linux, Login Process, Users & Permission (chmod, su, mount, cron, NFS), Process Management | CO5 |
| **7.** | UNIX Case Studies | Projects, Application-based Extensions, Security | CO5 |
| **Evaluation Criteria**  **Components Maximum Marks**  Lab Test-1 20  Lab Test-1 20  Day-to-Day 60 (Quiz + Evaluative Assignment + Class Test + Attendance)  **Total 100** | | | |

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| **Recommended Reading material:** Author(s), Title, Edition, Publisher, Year of Publication etc. (Text books, Reference Books, Journals, Reports, Websites etc. in the IEEE format) | |
| **1.** | Sumitabha Das, UNIX Concepts & Applications, 4th Edition, Tata McGraw-Hill Education, 2008 |
| **2.** | Maurice J. Bach, Design of UNIX Operating System, Prentice-Hall, 1986 |
| **3.** | Richards Stevens, Advanced Programming in the UNIX Environment, Pearson Education India, 2005 |
| **4.** | Marc J. Rochkind, Advanced UNIX Programming, 2nd Edition, Pearson Education, 2004 |
| **5.** | Evi Nemeth, Garth Snyder, Trent R. Hein, Unix and Linux System Administration Handbook, 4th Edition Pearson Education India, 2011 |
| **6.** | Richards Stevens, Unix Network Programming, Addison-Wesley Professional, 2004 |