# 20IT31E1 - FREE AND OPEN SOURCE SOFTWARE

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| Course Category: | Professional Elective | Credits: | 3 |
| Course Type: | Theory | Lecture-Tutorial-Practical: | 3-0-0 |
| Prerequisite: | Operating Systems and Basics of Unix | Sessional Evaluation:  Univ. Exam Evaluation:  Total Marks: | 40  60  100 |
| Objectives: | * The objectives of this course are to introduce students to open source software. * Students will study common open source software licenses, open source project structure, distributed team software development, and current events in the open source world. * Students will also work on an open source project and will be expected to make a significant contribution. | | |

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| Course Outcomes | Upon successful completion of the course, the students will be able to: | |
| CO1 | demonstrates fundamentals of Open Source. |
| CO2 | identify basic commands of Linux. |
| CO3 | express file filter commands and backup commands. |
| CO4 | recognize python essentials. |
| CO5 | construct applications with PHP and MYSQL |
| CO6 | identify real time FOSS applications. |
| Course Content | UNIT-I  **Introduction to Open Sources** - Need of Open Source-Advantages of Open Sources-Application of Open Sources-Who create Open Source-Who uses Open Source-Where do I get Open Source Software.  UNIT-II  **Introduction to Linux OS:** OS basics, Linux GUI: Exploring folders, Installation of binary packages, Built in Package Mangers Introduction to Linux file system, man pages, The first command cat, Command History  **Basic Unix Commands:** vi editor, Redirection operators, and some Unix commands.  UNIT-III  **File Filters:** Basic understanding about uniq, grep, cut, paste, join, tr, df, du, who, w, rm, unlink, ulimit, chmod, umask, chown, chgrp, id, diff, sed, cmp, comm, Introduction to pipes  **Backup Commands:** tar, cpio, zip and unzip commands, mount and umount.  UNIT-IV  **Python**  Syntax and Style, Python Objects, Number, Sequences, Strings, Lists and Tuples, Dictionaries, Conditional and Loops, Files, Input and Output, Errors and Exceptions  UNIT-V  **Open Source Database**  **MySQL:** Introduction-Setting up account- Starting, terminating and writing your own SQL programs.  **Open source Programming Languages**  **PHP:** Introduction, Variables, Constants, DataTypes, Operators, Statements, PHP and SQL Database, PHP Connectivity-Sending and receiving E-mails.  UNIT-VI  **Real Time FOSS Applications:** Ubuntu Operating System, LAMP, Mozilla Firefox, Virtual Box, Moodle, Wordpress, Android, Libre Office, Maxima, qBittorrent, LaTeX. | |
| Text Books &  Reference  Books | **TEXT BOOKS:**   1. Bernard Golden, "Succeeding with Open Source”, Addison-Wesley Professional,2004 2. N. B. Venkateshwarlu, “Introduction to Linux: Installation and Programming”, BS Publishers, 2008.   **REFERENCE BOOKS:**   1. Paul Kavanagh, “Open Source Software: Implementation and Management” Digital Press, 2004 | |
| E-Resources | 1. <https://onlinecourses.swayam2.ac.in/aic20_sp32/preview> 2. <https://www.digimat.in/nptel/courses/video/106106182/L01.html> 3. <https://nptel.ac.in/courses/117106113> 4. <https://www.educba.com/linux-filter-commands/> | |

**CO-PO Mapping:** 3-High Mapping, 2-Moderate Mapping, 1-Low Mapping, - -Not Mapping

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|  | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| **CO1** | 3 | 3 | 3 | - | 3 | - | - | - | - | - | - | - |
| **CO2** | 3 | 3 | 3 | - | 3 | - | - | - | - | - | - | - |
| **CO3** | 3 | 3 | 3 | 2 | 3 | - | - | 1 | - | - | - | - |
| **CO4** | 3 | 3 | 3 | 2 | 3 | - | - | - | - | - | - | - |
| **CO5** | 3 | 3 | 3 | 1 | 3 | - | - | 2 | - | - | 3 | - |
| **CO6** | 3 | 3 | 3 | 1 | 3 | - | - | - | - | - | 3 | - |