**Course Plan**

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| **L. No.** | **TOPICS** |
| L0 | Course delivery plan, Course assessment plan, Course outcomes, Program outcomes, CO-PO mapping, reference books, Introduction to Kernel and Shell |
| L1 | Operating system – Kernel , shell , File system, wild cards |
| L2 | Process , Networking |
| L3 | Git |
| L4 | Intro to scripting, chmod, exit status |
| L5 | Variables , arithmetic, quotes |
| L6 | Redirection, pipe , tee |
| L7 | Constructs – conditional |
| L8 | Constructs – looping, command line |
| L9 | Power utilities – cut , paste, join, uniq, sort , … |
| L10 | Sed |
| L11 | Sed regex |
| L12 | Grep |
| L13 | Awk – pattern matching |
| L14 | Awk – report generation |
| L15 | Make |
| L16 | Perl – variables , Pattern matching |
| L17 | Perl – constructs |
| L18 | Perl – file handling |
| IT1 | Internal test 1 |
| L19 | Python – data types |
| L20 | Python – List |
| L21 | Python – Tuples |
| L22 | Python – dictionary |
| L23 | Python – constructs |
| L24 | Python – file handling |
| L25 | Python – oops – Abstraction |
| L26 | Python – oops – encapsulation |
| L27 | Python – oops – Polymorphism |
| L28 | Python – oops – Inheritance |
| L29 | Tcl/tk – data types |
| L30 | Tcl/tk – constructs |
| L31 | Tcl/tk – constructs |
| L32 | Tcl/ widgets |
| L33 | Introduction to uml |
| L34 | Building blocks – modeling types |
| L35 | Design patterns |
| L36 | Design pattern in Python |

**Assessment Plan :**

Theory : Weekly Assignment (Theory) – 10 Assignments - Each Assignment carries 10 Marks - reduce to 20 Marks

**Course Plan – Lab**

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| **L. No.** | **TOPICS** |
| L1 | Getting Help - Basic Linux commands - file systems |
| L2 | Process – networking – git |
| L3 | Bash scripting |
| L4 | Grep |
| L5 | Sed |
| L6 | Awk – make |
| L7 | Perl |
| L8 | Python |
| L9 | Python – oops |
| L10 | Tcl/TK |
| L11 | UML – Case studies |
| L12 | Design Pattern - Case Studies |

Lab : Weekly Lab Assignments (Lab) - 12 Lab Assignments – Each Assignments carries 10 Marks – Reduce to 20 Marks