Course: 502: UNIX & Shell Programming

Course Code	502
Course Title	UNIX & Shell Programming
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation etc.)
Review / Revision	June 2019
Purpose of Course	To provide basic knowledge of Multi-User Operating System.
Course Objective	1. To make students aware of basic concepts of Multi-User Operating System. 2. To make students learn Shell Programming.
Pre-requisite	Fundamental knowledge of Operating System.
Course Out come	The students will understand the concepts of Multi-User Operating System and will be able to work with such Operating System. The students will also be able to do shell programming in UNIX environment.
Course Content	**Unit 1. Introduction** 1.1. Features of Unix OS 1.2. System Structure 1.3. Shell & its features 1.4. Kernel 1.5. Architecture of the UNIX OS **Unit 2. Overview** 2.1 Logging in & out 2.2 I node and File Structure 2.3 File System Structure and Features 2.4 Booting Sequence & init process 2.5 File Access Permissions **Unit 3. Shell Programming** 3.1 Screen Editor "vi" 3.2 Environmental & user defined variables 3.3 Argument Processing 3.4 Shell's interpretation at prompt 3.5 Arithmetic expression evaluation 3.6 Control Structure 3.7 Redirection 3.8 Background process & priorities of process 3.9 Conditional Execution **Unit 4. Advanced Shell Programming** 4.1. Filtering utilities: grep, sed etc. 4.2. awk utility 4.3. Batch process 4.4. Splitting (cat, cut, head and tail), comparing (cmp, comm., diff), Sorting(sort), Merging & Ordering files (paste, uniq) **Unit 5. Communication with other users** 5.1 write, wall and mesg 5.2 mail, motd and news

Reference Books	1. Unix Shell Programming, 3rd Edition, Stephen G Kochan, Patrick Wood – Sams Publishing 2. Unix Shell Programming-3rd edition, Stephen G Kochan & Patrick Wood –Sams Publishing. 3. Sed & awk -2nd edition, Dale Dougherty & Arnold Robbins, - O'Reilly Media. 4. The Unix Programming Environment, Kernigham & Pike –PHI. 5. The Design of the UNIX OS, M. J. Bach – Prentice Hall. 6. Operating Systems, A. S. Godbole –Tata McGraw Hill. 7. Working with UNIX, Vijay Mukhi –BPB Publications. 8. UNIX Shells, Vijay Mukhi –BPB Publications. 9. UNIX System Concepts & Applications, Das –Tata McGraw Hill. 10. UNIX & Shell Programming, Yashwant Kanetkar –BPB Publications.
Teaching Methodology	Class Work, Discussion, Self-Study, Seminars and/or Assignments
Evaluation Method	30% Internal assessment. 70% External assessment.