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| **ELEMENT** | **CONTENT** |
| DEPARTMENT | CIS |
| AUTHOR (S) | Jack Skoda |
| COURSE NUMBER | **CIS 2230** |
| COURSE TITLE | **System Administration** |
| SHORT TITLE | System Admin |
| COURSE LEVEL | 2000 |
| DATE CREATED |  |
| CHECKED/CHANGED | 10/2/2017 |
| PREREQUISITES | C- or better in CIS 2025 or 2262 or 2271 |
| COREQUISITES |  |
| RESTRICTIONS |  |
| SPECIAL FEES | No |
| CREDITS | 4 |
| HOURS | 3 hours of lecture, 2 hours of lab per week |
| SEMESTER | Spring |
| COURSE DESCRIPTION | In this course, the student explores the basics of system management. The course provides the student with enough theory to understand how operating systems work and to interpret the output of various management tools. It also covers practical issues in system administration including process, memory, and file system monitoring and performance tuning. Computer security is also discussed. |
| SUGGESTED TEXTS | *The Practice of System and Network Administration*; Limoncelli & Hogan |
| OPTIONAL TEXTS | *The Linux Command Line*; William E. Shotts, Jr. |
| COURSE OUTCOMES | The successful student will be able to:   1. Install a significant operating system 2. Understand the basic subsystems provided by an operating system and access them (using the API) 3. Understand how different subsystems affect overall system performance and use tools to monitor system performance 4. Understand user and group management 5. Understand process scheduling 6. Write shell scripts using bash 7. Understand a public key cryptography system and use such a system enough to send and receive encrypted materials to/from another individual 8. Understand how a file system works 9. Explain considerations for system administration documents and administrative controls |
| COURSE CONTENT | 1. Performance monitoring 2. Processes (scheduling, creation) 3. Shell scripting 4. Memory (physical, virtual, swap) and memory monitoring 5. Interprocess communication (pipes, shared memory, sockets) 6. Device drivers 7. Encryption 8. File systems |
| LAB/STUDIO OUTCOMES | The successful student will be able to:   1. Install, configure, and operate several standard information technology systems |
| LAB/STUDIO CONTENT | 1. Using virtualization software 2. Interacting with command line utilities 3. Managing user accounts 4. Writing shell scripts 5. Installing and managing software 6. Administrative control documentation 7. Backup and recovery tools and planning |
| LECTURE CAPACITY | 32 |
| LAB CAPACITY | 16 |
| GRADED OR P/NP | Graded |
| EVALUATION | Participation, quizzes, exams, homework, lab reports |
| DELIVERY METHOD | LEC, LAB |
| ROOM REQUIREMENTS | CIS lab for lab |
| AUTHOR’S NOTES |  |