



**Course Title: INTRODUCTION TO SYSTEM ADMINISTRATION**  
**Course #: IT 150**

**Credit Hours:3**  
**Semester: SPRING 2022**  
**Cap:15**

**Faculty:** SUMATHI RAGAVANANATHAM                      **E-mail:** sragavanantham@navajotech.edu  
**Office :** IT Bldg Room 116                                      **Office Phone:** 505-786-4100  
**Office Hours** (face-to-face or online) : Monday 1-2 pm ONLINE  
**Preferred Communication** (email and/or text; will respond within 24 hours)

**Modality** (face-to-face, hybrid, or online): face to face  
**Class Location and Meeting Times** (if face-to-face):( Monday 9:30am to 10:50 am))  
**Meeting Hours and Online Hours** (if hybrid): (Wednesday 9:30am to 10:50 am)

**Required Materials:**

**Textbook:** Unix and Linux System Administration Handbook (Paperback – 4<sup>th</sup> Edition)  
by Evi Nemeth, Garth Snyder, Trent R. Hein, Ben Whaley  
**ISBN:** 978-0-13-148005-6  
**Tools:** USB drive  
**Lab Fee:** None

**Mission, Vision, and Philosophy**

**Mission:** Navajo Technical University honors Diné culture and language, while educating for the future.

**Vision:** Navajo Technical University provides an excellent educational experience in a supportive, culturally diverse environment, enabling all community members to grow intellectually, culturally, and economically.

**Philosophy:** Through the teachings of Nitsáhákees (thinking), Nahátá (planning), Íina (implementing), and Siihasin (reflection), students acquire quality education in diverse fields, while preserving cultural values and gaining economic opportunities.

## Course Description

This course provides content that exposes students to best practices of system administration. Areas covered include storage management, network design and administration, email, web hosting, scripting, software configuration management, performance analysis, Windows and Mac interoperability, virtualization, DNS, security, and management of IT service organizations. Three main areas of coverage are basic administration, networking and interoperability.

| Course Outcomes                                                                                                                                                                     | Course Assessments                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| 1. Students will learn how to effectively utilize basic system administration techniques and skills for the successful management of computer systems, their hardware, and software | Complete reading assignments, pretests (quizzes), final exams and projects if any. |
| 1. Students will acquire core network administration techniques to connect workstations to local area networks and to other networks for communication and data sharing             |                                                                                    |
| 2. Students will learn how to various system administration processes and services across multiple operating systems                                                                |                                                                                    |
|                                                                                                                                                                                     |                                                                                    |

## Connections to Program Assessment (Course-Embedded Measures)

### Course Activities

| Week | Date             | Class Topics/Reading Due       | Assignments Due       | Assessments |
|------|------------------|--------------------------------|-----------------------|-------------|
| 1    | 01/19/2022       | Introduction to Unix OS        | Due before next class |             |
| 2    | 01/24/2022       | Scripting and the shell        | “                     |             |
|      | <b>1/21/2022</b> | <b>Last day to add/drop</b>    |                       |             |
| 3    | 01/26/2022       | Booting and shutting down      | “                     |             |
| 4    | 01/31/2022       | Access Control & Rootly powers | “                     |             |
| 5    | 02/02/2022       | Controlling Process            | “                     |             |
| 6    | 02/07/2022       | Filesystem Management          | “                     |             |
| 7    | 02/09/2022       | Access control list            | “                     |             |
| 8    | 02/14/2022       | Adding & Removing users        | “                     |             |
| 9    | 02/16/2022       | Storage Management             | “                     |             |
| 10   | 02/21/2022       | Disk Partitioning              | “                     |             |
| 11   | 02/23/2022       | RAID Level                     | “                     |             |

|           |                   |                                      |                |  |
|-----------|-------------------|--------------------------------------|----------------|--|
|           | <b>2/25/2022</b>  | <b>Graduation Petition due</b>       |                |  |
| 12        | 02/28/2022        | Periodic Process                     | “              |  |
| 13        | 03/02/2022        | Backup devices and media             | “              |  |
| 14        | 03/07/2022        | MidTerm Review                       | “              |  |
| 15        | <b>03/09/2022</b> |                                      | <b>MidTerm</b> |  |
|           | <b>3/12/2022</b>  | <b>Midterm grades due</b>            |                |  |
|           | <b>3/14-18</b>    | <b>SPRING BREAK</b>                  |                |  |
| 16        | 03/21/2022        | Syslog and Log files                 | “              |  |
| 17        | 03/23/2022        | Driver Management                    | “              |  |
| 18        | 03/28/2022        | Kernel Management                    | “              |  |
| 19        | 03/30/2022        | TCP/IP Networking                    | “              |  |
|           | <b>3/13/2022</b>  | <b>Last day to withdraw with “W”</b> |                |  |
| 20        | 04/04/2022        | Packet Addressing                    | “              |  |
| 21        | 04/06/2022        | Routing Management                   | “              |  |
| 22        | 04/11/2022        | DHCP Protocol                        | “              |  |
| 23        | 04/13/2022        | DNS: DomainName System               | “              |  |
| 24        | 04/18/2022        | Electronic Mail                      | “              |  |
| 25        | 04/20/2022        | Security                             | “              |  |
| 26        | 04/25/2022        | Web Hosing                           | “              |  |
| 27        | 04/27/2022        | Virtualization server setup          | “              |  |
| 28        | 05/02/2022        | Datacenter Basic                     | “              |  |
| 29        | 05/04/2022        | Review Final Exam                    | “              |  |
| <b>30</b> | <b>05/09/022</b>  |                                      | <b>Finals</b>  |  |
|           | <b>5/13/2022</b>  | <b>Graduation</b>                    |                |  |

### Grading Plan

|                     |     |               |
|---------------------|-----|---------------|
| Assignments         | 40% | A = 100 - 90% |
| Mid-term            | 25% |               |
| End Sem             | 25% | B = 89 - 80%  |
| Quizzes             | 5%  | C = 79 - 70%  |
| Class Participation | 3%  | D = 69 - 60%  |
| Portfolio:          | 2%  | F < 60%       |

### Grading Policy

Students must do their own work. Cheating and plagiarism are strictly forbidden. Cheating includes (but is not limited to) plagiarism, submission of work that is not one's own, submission or use of falsified data, unauthorized access to exams or assignments, use of unauthorized material during an exam, or supplying or communicating unauthorized information for assignments or exams.

### Participation

Students are expected to attend and participate in all class activities. Points will be given to students who actively participate in class activities including guest speakers, field trips, laboratories, and all other classroom events.

### Cell phone and headphone use

Please turn cell phones off **before** coming to class. Cell phone courtesy is essential to quality classroom learning. Headphones must be removed before coming to class.

### Attendance Policy

Students are expected to attend all class sessions. A percentage of the student's grade will be based on class attendance and participation. Absence from class, regardless of the reason, does not relieve the student of responsibility to complete all course work by required deadlines. Furthermore, it is the student's responsibility to obtain notes, handouts, and any other information covered when absent from class and to arrange to make up any in-class assignments or tests if permitted by the instructor. Incomplete or missing assignments will necessarily affect the student's grades. Instructors will report excessive and/or unexplained absences to the Counseling Department for investigation and potential intervention. **Instructors may drop students from the class after three (3) absences unless prior arrangements are made with the instructor to make up work and the instructor deems any excuse acceptable.**

### **Study Time Outside of Class for Face-to-Face Courses**

**For every credit hour in class, a student is expected to spend two hours outside of class studying course materials.**

### **Study Time for Hybrid or Blended Courses**

**For a hybrid or blended course of one credit hour, a student is expected to spend three hours per week studying course materials.**

### **Study Time for Online Courses**

**For an online course of one credit hour, a student is expected to spend four hours per week studying course materials.**

### **Academic Integrity**

Integrity (honesty) is expected of every student in all academic work. The guiding principle of academic integrity is that a student's submitted work must be the student's own. Students who engage in academic dishonesty diminish their education and bring discredit to the University community. Avoid situations likely to compromise academic integrity such as: cheating, facilitating academic dishonesty, and plagiarism; modifying academic work to obtain additional credit in the same class unless approved in advance by the instructor, failure to observe rules of academic integrity established by the instructor. **The use of another person's ideas or work claimed as your own without acknowledging the original source is known as plagiarism and is prohibited.**

### **Diné Philosophy of Education**

The Diné Philosophy of Education (DPE) is incorporated into every class for students to become aware of and to understand the significance of the four Diné philosophical elements, including its affiliation with the four directions, four sacred mountains, the four set of thought processes and so forth: Nitsáhákees, Nahát'á, Íina and Siih Hasin which are essential and relevant to self-identity, respect and wisdom to achieve career goals successfully.

### **Students with Disabilities**

The Navajo Technical University and **Sumathi Ragavanantham , Assistant Professor, School of Engineering, Math and Technology** are committed to serving all enrolled students in a non-discriminatory and accommodating manner. Any student who feels he/she may need an accommodation based on the impact of disability or needs special accommodations should inform NTU in accordance with the procedures of the subsection entitled "Students with Disabilities" under Section 7: Student Support Programs, NTU Student Handbook.

### **Email Address**

Students are required to use NTU's email address for all communications with faculty and staff.

**Final Exam Date: May 09<sup>th</sup> 2022**