IT 3110: Systems Automation

Spring 2021 Schedule

Resources

- **CIT VM Farm**
  - Create VM and connect from osx/Linux
  - Manage VMs with CLI instead of Web
  - Connect to vm from Linux host
- **AWS**
  - Create AWS Educate Account
  - Create EC2 instance
  - Connect EC2 instance
- **Software**
  - If you are using windows to connect to your vm, you might need the following:
    - Putty
    - TightVNC
  - If you have a newer version of windows 10 and have installed the linux subsystem, you can just ssh from the command line like you do in OSX and Linux.

**Week 1 (Jan 11,13)**

- **Slides**
  - DHCP Slides
- **Readings**
- **Lectures**
  - DHCP Lecture
  - Bionic Networking
  - Wireshark DHCP Capture
- **Screenshots/Helps**
  - DHCP Dynamic
  - DHCP Fixed
  - DHCP Dynamic Client
- **Assignment**
  - Hosts

**Week 2 (Jan 20)**

- **Slides**
  - NFS Slides
  - PXE Boot
  - Kickstart
- **Reading**
- **Lectures**
- **Screenshots/Helps**
  - NFS How To
  - kickstart
  - tftp and Netboot
- **Assignment**
  - DHCP

**Week 3 (Jan 25, 27)**

- **Slides**
  - Diskless
Week 4 (Feb 1, 3)

** EXAM 1 **

- Slides
- Reading
- Lectures
- Screenshots/Helps
  - Review
  - Capture image fog video old video
  - Deploy image fog video
- Assignment
  - DHCP 2 - netboot/kickstart
  - Diskless Boot
  - FOG

Week 5 (Feb 8,10)

- Slides
  - Shell 1
  - StdOut
  - StdIn
  - Command Execution
- Reading
  - Shell review
  - stdout review
  - stdin review
  - executing commands
- Lectures
- Screenshots/Helps
- Assignment
  - Bash on Windows

Week 6 (Feb 17)

- NO CLASS FEB 15
- Slides
  - Variables
  - Logic
  - Sed/Awk
- Reading
  - Variables
  - Shell logic and arithmetic
  - AWK, SED - Read 7.10- 7.11
- Lectures
• Screenshots/Helps
  • SSH As root

• Assignment
  • Shell Script 1
  • Shell Script 2

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**Week 7 (Feb 22, 24)**

• Slides
  • Regex
  • Shell Features
• Reading
  • Additional Scripting
• Lectures
• Screenshots/Helps
• Assignment
  • Shell Script 3
  • Regex

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**Week 8 (Mar 1, 3)**

• Slides
  • Shell Speed
  • Shell Speed
• Reading
  • Quick Shell
  • Troubleshooting
• Lectures
• Screenshots/Helps
  • Sample scripting exam
• Assignment
  • Shell Script 4
  • Shell Script 5

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**Week Mar 7-13**

SPRING BREAK

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**Week 9 (Mar 15, 17)**

TEST 2

• Slides
• Reading
• Lectures
  • Review AWS
  • Infrastructure as Code
  • Terraform
• Screenshots/Helps
• Assignment

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**Week 10 (Mar 22, 24)**

• Slides
- **Automation with Ansible**
- **Ansible Playbooks**
- **Ansible Playbooks 2**

- **Reading**
- **Lectures**
  - Configuration management with Ansible
- **Screenshots/Helps**
- **Assignment**
  - **Ansible 1**
  - **Ansible 2**

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**Week 11 (Mar 29,31)**

- **Slides**
  - **Ansible Roles**
- **Reading**
- **Lectures**
  - **Ansible Roles**
  - **Example of Roles**
- **Screenshots/Helps**
- **Assignment**
  - **Ansible 3**

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**Ansible Exam**

**Week 12 (Apr 5,7)**

- **Slides**
  - **Python**
- **Reading**
- **Lectures**
  - **Python video slide lecture**
- **Screenshots/Helps**
  - **Python example**
- **Assignment**
  - **Python**

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**Week 13 (Apr 12,14)**

- **Slides**
  - **Salt**
- **Reading**
  - **Salt states**
  - **Basic usage**
  - **More complex states**
- **Lectures**
  - **Installing saltstack**
- **Screenshots/Helps**
- **Assignment**
  - **Salt 1**
Week 14 (Apr 19,21)

- Reading
- Lectures
  - Salt 1
  - Salt 2
- Screenshots/Helps
  - Salt example file
- Assignment
  - Salt 2
  - Salt 3

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Week 15 (Apr 26,28)

- SALT
- REVIEW
- EXAM