IT 3110: Systems Automation

Spring 2022 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 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 10,12)

- **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 19)

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

Week 3 (Jan 24, 26)

- **Slides**
  - Diskless
- **Reading**
Week 4 (Jan 31, Feb 2)

** 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 7,9)

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

Week 6 (Feb 14,16)

- Slides
  - Logic
  - Sed/Awk
- Reading
  - Variables
  - Shell logic and arithmetic
  - A better one on logic
  - Recommended on brackets
  - 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 23)**

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• Slides
  • Regex
  • Shell Features

• Reading
  • Additional Scripting
  • Shell Speed
  • Shell troubleshooting

• Lectures

• Screenshots/Helps

• Assignment
  • Shell Script 3
  • Regex

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**Week 8 (Feb 28, Mar 2)**

• Slides

• Reading
  • Quick Shell
  • Troubleshooting

• Lectures

• Screenshots/Helps
  • Sample scripting exam
  • Sample solution other

• Assignment
  • Shell Script 4
  • Shell Script 5

**TEST 2**

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**Week 9 (Mar 7,9)**

• Slides
  • Terraform
  • Terraform2
  • Terraform3

• Reading
  • Read chapter 2 in “Terraform up and running 2nd edition” found on Oreilly (safarionline) from library.dixie.edu website.

• Lectures
  • Review AWS
  • Infrastructure as Code
  • Terraform
**Screenshots/Helps**

**Assignment**
- Terraform
- Terraform 2

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**Week Mar 13-19**

**SPRING BREAK**

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**Week 10 (Mar 21,23)**

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

- **Reading**
  - Ansible variables

- **Lectures**
  - Configuration management with Ansible

- **Screenshots/Helps**

- **Assignment**
  - Ansible 1
  - Ansible 2

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**Week 11 (Mar 28,30)**

- **Slides**
  - Ansible Roles
  - Ansible Advanced stuff

- **Reading**

- **Lectures**
  - Ansible Roles
  - Example of Roles

- **Screenshots/Helps**

- **Assignment**
  - Ansible 3

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**Terraform and Ansible Exam**

**Week 12 (Apr 4,6)**

- **Slides**
  - Python

- **Reading**

- **Lectures**
  - Python video slide lecture

- **Screenshots/Helps**
Week 13 (Apr 11,13)

- Slides
  - Salt
- Reading
  - Salt states
  - Basic usage
  - More complex states
- Lectures
  - Installing saltstack
- Screenshots/Helps
- Assignment
  - Salt 1

Week 14 (Apr 18,20)

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

Week 15 (Apr 25,27)

- SALT
- REVIEW
- EXAM