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.

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**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

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**Week 2 (Jan 20)**

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

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

- **Slides**
  - Diskless
• Reading
  • Lectures
  • Screenshots/Helps
    • **Dual netboot**
    • **Create an Initial ramdisk**
    • **Use debootstrap to create a disk image**
    • **FOG**
• Assignment
  • **NFS 1**

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**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**

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**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**

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**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
Week 7 (Feb 22, 24)

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

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

Week Mar 7-13

SPRING BREAK

Week 9 (Mar 15, 17)

TEST 2

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

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