

Course Syllabus

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Valencia College, Division of Engineering, Computer Programming & Technology
Department of Network Engineering Technology
DHSNSA National Center of Academic Excellence in Cyber Defense Education
Welcome to CNT2000C--Network Automation
Red Hat Enterprise Linux Automation with Ansible

[Red Hat Certified Engineer \(RHCE\)](#) <https://www.redhat.com/en/services/training/ex294-red-hat-certified-engineer-rhce-exam-red-hat-enterprise-linux-9>

Lecturer:

Dr. Wael K. Yousif (<http://frontdoor.valenciacollege.edu/faculty.cfm?aid=wyou5if&CFID=9369377&CFTOKEN=69492919&cb031-C720BF3-F9D8-BF6B-BAC36ED872410727>), CIEH, GCFW, CCDA, CCNA, CCAI, VCA, Net+, CCNP (Routing), CJEI, CompTIA Linux+, Red Hat Certified System Administrator (RHCSA), AWS Certified Cloud Practitioner.
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[Faculty Front Page](#) (<http://frontdoor.valenciacollege.edu/20wyou5if>)



Class Meeting Times:

This is an online class with no scheduled face to face meetings. All lectures will be recorded and placed under the corresponding modules.

The only Live Zoom Meeting will be on Wednesday August 23 at 6:00 PM to go over the course orientation. Please make every effort to attend in person. Use this link to join the Zoom meeting: <https://valenciacollege.zoom.us/j/92426091197> <https://valenciacollege.zoom.us/j/92426091197>
The course orientation meeting will be recorded and available for streaming after the meeting.

Virtual Office Hours([Link to Microsoft Team](#)): <https://valenciacollege.zoom.us/j/92426091197>

Monday 9:00 AM to 11:30 AM

Tuesday 7:00 PM - 9:00 PM

Wednesday 9:00 AM - 11:30 AM

Thursday 9:30 AM - 10:30 AM

Friday 10:00 AM - 12:00 Noon

Open Lab ([Link to Team](#)) <https://teams.microsoft.com/channel/%3a6ed722d440e7411892b07674c452b0f%3d?thread=tac2c2General?groupId=986d46b5-7034-4721-8922-478493c276&tenantid=6e886935-3d17-41ab-8544-126b0e92a47c> :

M:(1:00-5:00)

T:(1:00-5:00)

W:(1:00-5:00)

R:(1:00-5:00)

And Hours by appointment: M-F 6:00 pm to 8:00 pm and Saturday 12:00 pm to 6:00 pm

Course Description:

CNT 2000C -- Network Automation: RH294 | Red Hat Certified Engineer (RHCE)

As teams and organizations pursue digital transformation, the Red Hat Certified Engineer (RHCE) credential helps you to demonstrate skills critical to managing systems in a DevOps environment. One of the key tenets of DevOps is automation and the RHCE is an extension of the knowledge required to automate the deployment, management, and support of multi-system environments — making your credential even more valuable and relevant. By developing automation skills to complement your deployment and configuration expertise, you will show your understanding of how Ansible Automation interacts with other Red Hat technologies.

Course Required Material:

1) Access to the training environment, download the ova file: Download link: https://mail.valenciacc-my.sharepoint.com/:f/g/personal/wyou5if_valenciacollege_edu/Eu_4zJ93pcJNid515m_XUAgBNHKYxS1A6HsHULwRTY0EJQ7e=Fh7zIt (https://mail.valenciacc-my.sharepoint.com/:f/g/personal/wyou5if_valenciacollege_edu/Eu_4zJ93pcJNid515m_XUAgBNHKYxS1A6HsHULwRTY0EJQ7e=Fh7zIt)

And import the ova file into your VMWare Workstation. Watch this [Video Demo](#) (https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fvalenciacollege.zoom.us%2Frec%2Fshare%2FTknTyopkDadJynY2VzTUopQPiLeJVJOtOe26Bat4JTGYGwKizbPPDQKhp9B5yAie_MMuIm3OeG5xnLzA&data=05%7C01%7Cwyou5if%40valenciacollege.edu%7C1b9e331de65b424dd32808db8dd0ba73%7C0e886935d1741a88544135b0a92a47c%7C1%7C0%7C638259699852754274%7CUnknown%7CTWFPbGZsb3d8eyJWlji0MwLjAwMDAILCjQlji0V2luMzIiLjBTIjI6Ikt1haWwLjCjXVCi6MnQ%3D%7C3000%7C%7C%7C&data=u5EvRjUPuBibPAlnzBGBIVE1%2F8GseBFS1xh8dnrNouU%3D&reserved=0) on how to setup your training environment for the course:

2) Access to the Red Hat Academy (<https://rha.ole.redhat.com/rha/app/summary>). (Must complete the registration requirements under Module 0 before you can access the online curriculum on the Red Hat Academy).

3) Access to Kaltura Screen Recording -- All Lab Reports are done using Screen Recording with Audio Explanation:

Use the instructions in this PDF file to learn how to download, install, and use Kaltura. [Kaltura Capture-1.pdf](https://online.valenciacollege.edu/courses/180034/files/45272796/download?download_frd=1) (https://online.valenciacollege.edu/courses/180034/files/45272796/download?download_frd=1), https://online.valenciacollege.edu/courses/180034/files/45272796/download?download_frd=1

(https://online.valenciacollege.edu/courses/183448/files/44311283/download?download_frd=1) **4) Access to VMWare Workstation.** Use the steps below to redeem your access code and use it to download & license your VMWare Workstation.

VMware IT Academy Web Store: <https://itacademy.vmware.com/> (<https://itacademy.vmware.com/>)

- Check your Valencia email for an e-mail from info@itacademy.brightspace.com with the subject:
 - "Welcome! Please redeem your VMware subscription!"**
- If you don't see this e-mail, then check [Your SPAM filter](#), following the directions in DAO 216, <https://teams.microsoft.com/teams/3a6ed722d440e7411892b07674c452b0f%3d?thread=tac2c2General?groupId=986d46b5-7034-4721-8922-478493c276&tenantid=6e886935-3d17-41ab-8544-126b0e92a47c>
- If this e-mail is still not found, email enrollment@valenciacollege.edu with your name, VIO and email. The email subject should be: VMware Subscription. Please copy enrollment@valenciacollege.edu / <mailto:enrollment@valenciacollege.edu> on your email. Thank You!
- If you do find the e-mail, have the students follow the directions for registration within the body of the e-mail
- Here is a direct link to the VMWare software download and license key page: <https://itacademy.brightspace.com/dao/dao-9213> <https://itacademy.brightspace.com/dao/dao-9213>

Important Dates

- <https://valenciacollege.edu/academics/calendar/> (<https://valenciacollege.edu/academics/calendar/>)

Disclaimer: Any Changes in the policy and/or schedule of this syllabus may be made at any time during the semester at the discretion of the instructor.

Course Learning Outcomes

Upon course completion, students will be able to:

- Automate common Red Hat Enterprise Linux system administration tasks by using Ansible.
- Install and configure automation content navigator from Red Hat Ansible Automation Platform to run Ansible Playbooks in a container-based automation execution environment.
- Create and manage inventories of managed hosts, and prepare the hosts for connections from Ansible.
- Write effective Ansible Playbooks.
- Reuse code and simplify playbook development with Ansible Roles and Ansible Content Collections.

Lab Procedures

Lab submissions will not be accepted without prior written agreement. All Labs are individual assignments unless explicitly told differently at the beginning of the lab. Any student caught copying another student's answers will be given a '0' for the assignment. Any further violation will result in the student being withdrawn from the course.

Grading System	Scale
Module 0 Assignments:	5%
Laboratory Assignments:	45%
End of Chapter, Comprehensive Labs	25%
Final Exam	25%

Quizzes and Exams

- No late submission of course assignments without prior written agreement.** Failure to submit an assignment on time will result in a zero. It is the student's responsibility to notify the professor prior to the due date in order to receive special consideration.
- Cheating is prohibited.** Any student caught cheating, the instructor, has the right to withdraw the student from the class and recommend expulsion from the program.
- Each student is required to follow Valencia policy regarding academic honesty. All work submitted by students is expected to be the result of the student's individual thoughts, research, and self-expression unless the assignment specifically states "group project."
- All exams are individual assignments. If anyone else turns in your work, all involved will be withdrawn from the course and reported for academic misconduct.

Miscellaneous Rules

- This is an online class with no required face to face meetings.
- It is the student's responsibility to withdraw from the course. Any withdrawal after the withdrawal deadline could result in WF.
- No make-up assignments are permitted unless prior arrangement with the instructor has been made.
- You must satisfactorily complete all the course requirements to receive a passing grade.

Course Summary:

Date	Details	Due
	Introduction/Discussion-Required Attendance Activity (https://online.valenciacollege.edu/courses/180034/assignments/919720)	due by 11:59pm
	Microsoft Teams-Proof of Accession The Course Channel on Microsoft Teams (https://online.valenciacollege.edu/courses/180034/assignments/919720)	due by 11:59pm
Thu Aug 24, 2023	Proof of Accession Your Ansible 3 Training Environment (https://online.valenciacollege.edu/courses/180034/assignments/919720)	due by 11:59pm
	Registration with the Red Hat Linux Academy-Required Attendance Activity (https://online.valenciacollege.edu/courses/180034/assignments/919720)	due by 11:59pm
	The Red Hat Linux Academy-Proof of Accession the Web-Based Curriculum (https://online.valenciacollege.edu/courses/180034/assignments/919720)	due by 11:59pm
Thu Aug 31, 2023	Chapter1-Guided Exercise: Install Ansible (https://online.valenciacollege.edu/courses/180034/assignments/919720)	due by 11:59pm
	Chapter2-Comprehension Labs: Introduction to Ansible Playbook (https://online.valenciacollege.edu/courses/180034/assignments/919720)	due by 11:59pm
Thu Sep 7, 2023	Chapter2-Guided Exercise: Building an Ansible Inventory (https://online.valenciacollege.edu/courses/180034/assignments/919720)	due by 11:59pm
	Chapter2-Guided Exercise: Write and Run Ansible Playbooks (https://online.valenciacollege.edu/courses/180034/assignments/919720)	due by 11:59pm
Thu Sep 14, 2023	Chapter2-Guided Exercise: Manage Roles (https://online.valenciacollege.edu/courses/180034/assignments/919720)	due by 11:59pm
	Chapter2-Guided Exercise: Manage Variables and Facts (https://online.valenciacollege.edu/courses/180034/assignments/919720)	due by 11:59pm
Thu Sep 21, 2023	Chapter2-Guided Exercise: Manage Facts (https://online.valenciacollege.edu/courses/180034/assignments/919720)	due by 11:59pm

Date	Details	Due
Thu Sep 28, 2023	Chapter4-Guided Exercise: Writing Loops and Conditional Tasks https://online.valenciacollege.edu/courses/180034/assignments/4920738	due by 11:59pm
	Chapter4-Guided Exercise: Handling Task Failure https://online.valenciacollege.edu/courses/180034/assignments/4920739	due by 11:59pm
	Chapter4-Guided Exercise: Implementing Playbooks https://online.valenciacollege.edu/courses/180034/assignments/4921241	due by 11:59pm
Thu Oct 5, 2023	Chapter4-Comprehensive Lab: Implementing Task Control https://online.valenciacollege.edu/courses/180034/assignments/4920739	due by 11:59pm
	Chapter4-Guided Exercise: Modify and Corvino Files to Hosts https://online.valenciacollege.edu/courses/180034/assignments/4921241	due by 11:59pm
Thu Oct 12, 2023	Chapter4-Comprehensive Lab: Deploying Files to Managed Hosts https://online.valenciacollege.edu/courses/180034/assignments/4920739	due by 11:59pm
	Chapter4-Guided Exercise: Deploying Custom Files with Jinja2 Templates https://online.valenciacollege.edu/courses/180034/assignments/4920739	due by 11:59pm
Thu Oct 19, 2023	Chapter6-Comprehensive Lab: Managing Complex Plays and Playbooks https://online.valenciacollege.edu/courses/180034/assignments/4920889	due by 11:59pm
	Chapter6-Guided Exercise: Including and Importing Files https://online.valenciacollege.edu/courses/180034/assignments/4920890	due by 11:59pm
	Chapter6-Guided Exercise: Selecting Hosts with Host Patterns https://online.valenciacollege.edu/courses/180034/assignments/4920921	due by 11:59pm
Thu Oct 26, 2023	Chapter7-Guided Exercise: Creating Roles https://online.valenciacollege.edu/courses/180034/assignments/4920961	due by 11:59pm
	Chapter7-Guided Exercise: Deploying Roles from External Content Sources https://online.valenciacollege.edu/courses/180034/assignments/4921136	due by 11:59pm
Thu Nov 2, 2023	Chapter7-Comprehensive Lab: Streamline Playbooks with Roles and Ansible Content Collections https://online.valenciacollege.edu/courses/180034/assignments/4921136	due by 11:59pm
	Chapter7-Guided Exercise: Getting Roles and Modules from Content Collections https://online.valenciacollege.edu/courses/180034/assignments/4921136	due by 11:59pm
	Chapter7-Guided Exercise: Reusing Content with System Roles https://online.valenciacollege.edu/courses/180034/assignments/4921141	due by 11:59pm
Thu Nov 9, 2023	Chapter8-Comprehensive Lab: Troubleshooting Ansible https://online.valenciacollege.edu/courses/180034/assignments/4921149	due by 11:59pm
	Chapter8-Guided Exercise: Troubleshooting Ansible Managed Hosts https://online.valenciacollege.edu/courses/180034/assignments/4921191	due by 11:59pm
	Chapter8-Guided Exercise: Troubleshooting Playbooks https://online.valenciacollege.edu/courses/180034/assignments/4921149	due by 11:59pm
Thu Nov 16, 2023	Chapter8-Guided Exercise: Managing Software and Subscriptions https://online.valenciacollege.edu/courses/180034/assignments/4921280	due by 11:59pm
	Chapter8-Guided Exercise: Managing the Host Process and Scheduled Processes https://online.valenciacollege.edu/courses/180034/assignments/4921307	due by 11:59pm
Thu Nov 30, 2023	Chapter8-Guided Exercise: Managing Users and Authentication https://online.valenciacollege.edu/courses/180034/assignments/4921306	due by 11:59pm
	Chapter8-Comprehensive Lab: Automating Linux Administration Tasks https://online.valenciacollege.edu/courses/180034/assignments/4921210	due by 11:59pm
	Chapter8-Guided Exercise: Managing Network Configuration https://online.valenciacollege.edu/courses/180034/assignments/4921246	due by 11:59pm
Thu Dec 7, 2023	Chapter8-Guided Exercise: Managing Storage https://online.valenciacollege.edu/courses/180034/assignments/4921033	due by 11:59pm
	Chapter15-Comprehensive Review for the RHCE Exam –Counts as the final exam for the course–Lab Four: Creating Roles https://online.valenciacollege.edu/courses/180034/assignments/4921246	due by 11:59pm
	Chapter15-Comprehensive Review for the RHCE Exam –Counts as the final exam for the course–Lab One: Deploying Ansible https://online.valenciacollege.edu/courses/180034/assignments/4921211	due by 11:59pm
	Chapter15-Comprehensive Review for the RHCE Exam –Counts as the final exam for the course–Lab Three: Managing Linux Hosts and Using System Roles https://online.valenciacollege.edu/courses/180034/assignments/4921246	due by 11:59pm
	Chapter15-Comprehensive Review for the RHCE Exam –Counts as the final exam for the course–Lab Two: Creating Playbooks https://online.valenciacollege.edu/courses/180034/assignments/4921212	due by 11:59pm