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# Containerization Micro Servs

## ITNW-2370

Summer 2022 Section 250 (CRN: 37175) 3 Credits 06/06/2022 to 08/14/2022 Modified 06/04/2022

### Meeting Times

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Dates:06/06/2022-08/14/2022

#### Online-Lecture

Saturday, 11:00 AM to 1:00 PM, <https://zoom.us/j/5221035499>

**"encouraged attendance, but not required"**

Join Zoom Meeting: <https://zoom.us/j/5221035499> (<https://zoom.us/j/5221035499>)

#### 1 on 1 Support

Anyday

<https://zoom.us/j/5221035499>

**"With a previous agreement on time is required**

**Contact me via Slack or Email to schedule support time"**

Join Zoom Meeting: <https://zoom.us/j/5221035499> (<https://zoom.us/j/5221035499>)

### Course Description

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Skills and knowledge related to Cloud computing architecture and services needed to create, deploy and manage containers will be introduced. Concepts of building blocks, container runtimes, container storage, networking and automation deployment, and orchestration of resources are delivered as skills through labs and lecture. Lab required. 3 credit hours. (W)

### Contact Information

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**Adjunct Faculty: Professor Juan Medina**

Email: [jmedina@collin.edu](mailto:jmedina@collin.edu)

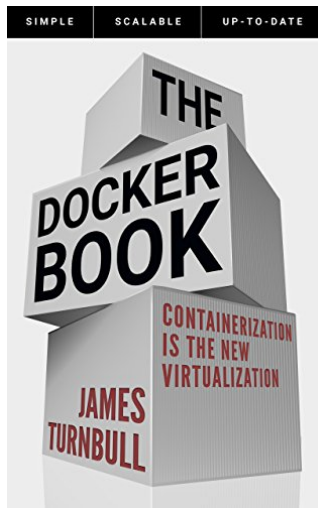
### Course Resources

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**Book: The Docker Book: Containerization is the new virtualization**

**\*\*Non-Required**

**\*\*Optional**



[https://www.amazon.com/Docker-Book-Containerization-new-virtualization-](https://www.amazon.com/Docker-Book-Containerization-new-virtualization-ebook/dp/B00LRROT14/ref=sr_1_24?crid=1RA0IC27U52VH&keywords=docker&qid=1654381800&sprefix=docke%2Caps%2C115&sr=8-24)

[ebook/dp/B00LRROT14/ref=sr\\_1\\_24?](https://www.amazon.com/Docker-Book-Containerization-new-virtualization-ebook/dp/B00LRROT14/ref=sr_1_24?crid=1RA0IC27U52VH&keywords=docker&qid=1654381800&sprefix=docke%2Caps%2C115&sr=8-24)

[crid=1RA0IC27U52VH&keywords=docker&qid=1654381800&sprefix=docke%2Caps%2C115&sr=8-24\)](https://www.amazon.com/Docker-Book-Containerization-new-virtualization-ebook/dp/B00LRROT14/ref=sr_1_24?crid=1RA0IC27U52VH&keywords=docker&qid=1654381800&sprefix=docke%2Caps%2C115&sr=8-24)

**Book: DevOps Culture and Practice with OpenShift: Deliver continuous business value through people, processes, and technology**

**\*\*Non-Required**

**\*\*Optional**



## \* Course Policies

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### Attendance

Online attendance is optional every Week.

## ✓ Method of Evaluation

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### Grading System

Type	Weight	Topic	Notes
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Type	Weight	Topic	Notes
Test	50%		
Assignments	50%		
Grading Scale			A [90 - 100] B [80 - 89] C [70 - 79] D [60 - 69] F [Below 60]

## Course Calendar

When	Topic	Notes
<b>Online-Lecture</b> Week1 06/11/2022 11:00 AM - 1:00 PM <a href="https://zoom.us/j/5221035499">https://zoom.us/j/5221035499</a>	Module 1 - Introduction to microservices	This module will review why microservices are crucial to the modern software development process and how it differs from Virtual Machines and other technologies.
<b>Online-Lecture</b> Week2 06/18/2022 11:00 AM - 1:00 PM <a href="https://zoom.us/j/5221035499">https://zoom.us/j/5221035499</a>	Module 2 - Installation and commands	This module will review installing a container management tool and the basic commands to manage containers.
<b>Online-Lecture</b> Week3 06/25/2022 11:00 AM - 1:00 PM <a href="https://zoom.us/j/5221035499">https://zoom.us/j/5221035499</a>	Module 3 - Container Images	This module will review the concept of images and how to create and administer the images in a remote repository.
<b>Online-Lecture</b> Week4 07/02/2022 11:00 AM - 1:00 PM <a href="https://zoom.us/j/5221035499">https://zoom.us/j/5221035499</a>	Module 4 - Container files	This module moves the knowledge in containers and images acquired in the previous modules to apply it to automated files to control our containers.
<b>Online-Lecture</b> Week5 07/09/2022 11:00 AM - 1:00 PM <a href="https://zoom.us/j/5221035499">https://zoom.us/j/5221035499</a>	Module 5 - Storage	This module will learn how to use storage in our containers.
<b>Online-Lecture</b> Week6 07/16/2022 11:00 AM - 1:00 PM <a href="https://zoom.us/j/5221035499">https://zoom.us/j/5221035499</a>	Module 6 - Networking	This module will explore how to isolate our container environments inside of local managed networks.
<b>Online-Lecture</b> Week7 07/23/2022 11:00 AM - 1:00 PM <a href="https://zoom.us/j/5221035499">https://zoom.us/j/5221035499</a>	Module 7 - Logging & Monitoring	We will explore how to monitor our containers and troubleshoot problems.

When	Topic	Notes
<b>Online-Lecture</b> Week8 07/30/2022 11:00 AM - 1:00 PM <a href="https://zoom.us/j/5221035499">https://zoom.us/j/5221035499</a>	Module 8 - Orchestration	During this module, we will advance our knowledge to explore the next step in our microservices world and understand orchestration tools.

## Student Learning Outcomes

Upon completion of this course, the student will be able to - 1. Explain what is microservices.2. Explain Characteristics of microservices.3. Explain the benefits of microservices.4. Identify and describe the Container Architecture.5. Create containerized services.6. Manage containers and container images.7. Create custom container images.8. Deploy multi-container applications.

## Institutional Policies

Collin College has a passion for Learning, Service and Involvement, Creativity and Innovation, Academic Excellence, Dignity and Respect, and Integrity. For more information about Collin College's mission, vision, and core values, please go to <https://www.collin.edu/aboutus/missioncorevalues.html> (<https://www.collin.edu/aboutus/missioncorevalues.html>).

All policies, guidelines, and procedures in the [Collin College Catalog](http://www.collin.edu/academics/catalog.html) (<http://www.collin.edu/academics/catalog.html>), [Collin College Board Policies](https://pol.tasb.org/Home/Index/304) (<https://pol.tasb.org/Home/Index/304>), and the [Collin College Student Handbook](http://www.collin.edu/studentresources/personal/studenthandbook.html) (<http://www.collin.edu/studentresources/personal/studenthandbook.html>) are applicable to this course.

## Americans with Disabilities Act

Collin College provides reasonable accommodations to afford equal educational opportunities to all people, in accordance with the Americans with Disabilities Act of 1990 (ADA), Americans with Disabilities Act and Amendments Act of 2008 (ADAAA), and Section 504 of the Rehabilitation Act of 1973. Students requesting accommodations under these provisions should contact Collin College's Accommodations at Collin College for Equal Support Services (ACCESS) Office at 972.881.5898 (voice) or [access@collin.edu](mailto:access@collin.edu). For more information, go to <https://www.collin.edu/studentresources/disabilityservices/index.html> (<https://www.collin.edu/studentresources/disabilityservices/index.html>).

Collin College has adopted Blackboard Ally to provide alternative formats of pages and documents in Canvas. You can now download your course files in different formats that fit your device, need, and learning preference. Click the "A download" icon next to your course files to view "Alternative Formats" of your course files. Then select your preferred format. The file may take a few minutes to download, and you can continue with your work while you wait. To learn more about alternative formats offered by Ally, please refer to the [Ally Student Help and Alternative Formats](https://help.blackboard.com/Ally/Ally_for_LMS/Student/Alternative_Formats) ([https://help.blackboard.com/Ally/Ally\\_for\\_LMS/Student/Alternative\\_Formats](https://help.blackboard.com/Ally/Ally_for_LMS/Student/Alternative_Formats)) webpage.

## Scholastic Dishonesty

To view the Board policies associated with this chapter, go to <https://pol.tasb.org/Policy/Search/304?filter=flb> (<https://pol.tasb.org/Policy/Search/304?filter=flb>).

Every member of the Collin College community is expected to maintain the highest standards of academic integrity. All work submitted for credit is expected to be the student's own work. Collin College may initiate disciplinary proceedings against a student or program applicant accused of scholastic dishonesty. While specific examples are listed below, this is not an exhaustive list, and scholastic dishonesty may encompass other conduct, including any misconduct through electronic or computerized means. Scholastic dishonesty includes, but is not limited to, one (1) or more of the following acts.

1. **Cheating** includes, but is not limited to, intentionally or unintentionally having access to unauthorized materials or electronic, digital media, telecommunication, and/or wearable devices (e.g., laptops, phones, smartwatches, Fitbits, Bluetooth devices, tablets) during a quiz or examination; receiving information in an unauthorized manner during a quiz or examination or to complete an assignment; using, buying, selling, soliciting, stealing, or otherwise obtaining course assignments and/or examination questions in advance; using information about exams posted on the Internet or in any electronic medium; violating a

faculty member's and/or the Testing Center's testing policies and procedures; leaving a test site without permission; failing to secure test materials; removing tests or answer sheets from a test site; using someone else's work for an assignment in whole or in part as if it were one's own; submitting or resubmitting an assignment in whole or in part (i.e., recycling an assignment or self-plagiarism) without the faculty member's permission; using annotated texts or teacher's editions; making false statements or omissions related to applications for enrollment, credit or class work, research, or the award of a degree; falsifying academic records or documents; and attempting to fulfill the requirements of a course through any other dishonest means.

2. **Collusion** includes, but is not limited to, intentionally or unintentionally aiding or attempting to aid another in an act of scholastic dishonesty; failing to secure academic work; providing an inappropriate level of assistance; collaborating with or communicating answers to a classmate about an examination or course assignment without the faculty member's permission; and allowing a classmate to copy answers.

3. **Plagiarism** includes, but is not limited to, intentionally or unintentionally failing to quote and cite words, information, and/or ideas taken from a source(s) in accordance with a citation style approved by the faculty member and/or inadequately paraphrasing (i.e., patchwriting or mosaic plagiarism).

In cases where an incident report has been filed for an alleged violation of scholastic dishonesty, the faculty member will delay posting a grade for the academic work in question until the case is final. A student found responsible for a scholastic dishonesty offense(s) will receive an appropriate disciplinary penalty or penalties from the District Dean of Students Office. The student may also receive a Scholastic Penalty in the course where the scholastic dishonesty took place. The faculty member will determine the appropriate Scholastic Penalty, which may range from a grade of zero (0) on the assignment to failing the course. For more information, see Chapter 12: Disciplinary Penalties in this Student Code of Conduct.

## Academic Etiquette and the College Experience

Students and professors at Collin College share a responsibility to promote, develop, and maintain a positive learning environment. Students are expected to show respect to other students and professors at all times. For more information regarding academic etiquette and the college experience, specifically student academic success and seeking out resources, disruptive use of electronic devices, and tardiness and absences, please refer to the [Student Handbook](http://www.collin.edu/studentresources/personal/studenthandbook.html) (<http://www.collin.edu/studentresources/personal/studenthandbook.html>).

## Institutional Deadlines

The Census Date is the 12th class day in a regular 16-week semester, or the fourth (4th) class day in a short summer semester. The census date varies for mini-semesters and express classes. Students are required to attend class prior to the census date. For more information, go to <https://www.collin.edu/gettingstarted/register/census%20dates.html> (<https://www.collin.edu/gettingstarted/register/census%20dates.html>).

Students may withdraw from a course(s) with a grade of "W" through the end of the eighth (8th) class week during a regular 16-week semester, through Tuesday of the third (3rd) week of classes in a short 5-week summer term, and through Thursday of the fifth (5th) week of classes in a long 10-week summer term. Withdrawals will appear on the student's official transcript, but have no effect on his or her grade point average (GPA). Contact the admissions area in the Student and Enrollment Services Office for withdrawal deadlines for other terms.

Prior to initiating a withdrawal, students should contact their professor(s) and/or an academic advisor. Withdrawal from Collin College must be initiated by the student. Students who discontinue class attendance and do not officially withdraw will receive a performance grade for the course(s). Students who need to withdraw from a class(es) may do so online or in person in the Student and Enrollment Services Office at any campus. For more information and withdrawal dates, please go to <https://www.collin.edu/gettingstarted/register/withdrawal.html> (<https://www.collin.edu/gettingstarted/register/withdrawal.html>).

## Additional Support

Collin College is dedicated to providing information and support to students. Please click on the following links for more information and to learn about support the College offers: [Mental Health Resources \(Counseling\)](https://www.collin.edu/studentresources/counseling/index.html) (<https://www.collin.edu/studentresources/counseling/index.html>), [CougarCare](https://timely.md/schools/index.html?school=collincollege&), (<https://timely.md/schools/index.html?school=collincollege&>) [Strategies of Behavioral Intervention \(SOBI\)](https://www.collin.edu/studentresources/SOBI/) (<https://www.collin.edu/studentresources/SOBI/>), [Financial Aid and Veteran Benefits](https://www.collin.edu/gettingstarted/financialaid/) (<https://www.collin.edu/gettingstarted/financialaid/>), [Anthony Peterson Center for Academic Assistance](http://www.collin.edu/studentresources/tutoring/) (<http://www.collin.edu/studentresources/tutoring/>) ([Writing Centers](#)

<http://www.collin.edu/studentresources/writingcenter/index.html>) and [Math Labs \(http://www.collin.edu/studentresources/mathlab/index.html\)](http://www.collin.edu/studentresources/mathlab/index.html)) and [Family Educational Rights and Privacy Act \(FERPA\) \(https://www.collin.edu/gettingstarted/register/ferpa.html\)](https://www.collin.edu/gettingstarted/register/ferpa.html).

For any other College Academic Policies, please refer to the Collin College [Catalog \(http://www.collin.edu/academics/pdf/2021-22%20Collin%20College%20Catalog.pdf\)](http://www.collin.edu/academics/pdf/2021-22%20Collin%20College%20Catalog.pdf) or [Student Handbook \(http://www.collin.edu/studentresources/personal/studenthandbook.html\)](http://www.collin.edu/studentresources/personal/studenthandbook.html).

## Additional Items

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### Criminal Background Notice

If your program requires a criminal background check, your placement in a required clinical site, cooperative, practicum, internship, and/or licensure/certification opportunity may be impacted. If you have any questions or concerns, please contact your program director and check with your licensing/certifying entity, if any, to determine your status.

### Web, Blended or Hybrid Class Information

### Additional Instructor Student Learning Outcomes