# SENG 6285: Cloud Computing
# Summer 2 2025

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| **Instructor** | Mr. Alex Vilkomir |
| **Instructor Office** | Science & Technology Building, Room C-111 |
| **Office Hours** | Office hours will be offered online on Teams.<br><br>Monday 12:00pm to 2:00pm<br>Wednesday 12:00pm to 2:00pm<br>Thursday 3:00pm to 4:00pm<br><br>Feel free to make an appointment with me if you need to meet outside of these hours. I will be available on MS Teams during these times. |
| **Instructor Phone** | 252-328-9439 |
| **Instructor Email** | vilkomira21@ecu.edu, responses within 24 hours during the week, potentially longer on weekends or over holidays |
| **Course Web Page** | Canvas: https://ecu.instructure.com/ |

## Course Description and Objectives

The catalog description for this course is as follows:

> *Techniques for developing applications and services to run on distributed networks using virtualized resources accessed over the Internet.*

In this course we will cover a number of topics relevant to cloud computing. This will include different cloud service models; cloud administration and security; cloud storage; software architectures related to, or enabled by, cloud; cloud application support; DevOps; and APIs. Upon completion of this course each student will be able to:

- Compare and contrast different service models for cloud computing, e.g., IaaS, PaaS, SaaS;
- configure and administer security, billing, networking, and logging for cloud services;
- select and configure appropriate storage solutions for cloud applications, including file-based, relational/SQL, and NoSQL storage alternatives;
- utilize cloud services to support typical application execution scenarios;
- configure and use DevOps build pipelines, including support for application build, automated test, containerization, and deployment;
- use and create RESTful APIs;
- use Infrastructure-as-Code solutions for automating the configuration of cloud services.

## Prerequisites

While there are no official prerequisites for this course, you should be comfortable with programming. This means you should have a programming background at least equivalent to that from SENG 5000. Given this is a graduate course, you should be able to learn parts of different languages in a self-guided manner, although I am happy to help recommend resources.

## Textbooks

Any needed material from textbooks will be made available directly on Canvas. There is no required book for this course.

If any research material will be required, it will be available through the ECU Joyner Library proxy, which will provide access to any papers discussed as part of the class. Other helpful material, including references to books, tutorials on the web, links to papers, and videos, will be posted as the course progresses.

## Grading

Students will be evaluated based on a combination of class activities, including homework assignments, quizzes, discussions, the midterm and final exams, and a research project/lesson. The final grade will be assessed with the following criteria, with grades normalized to a 100-point scale:

| Grading | |
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| A | $\geq 90$ |
| B | $\geq 80$ |
| C | $\geq 70$ |
| F | $< 70$ |

This grade is based on the following relative weights of the various activities:

| Weighting | |
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| Homework | 30% |
| Quizzes | 10% |
| Midterm Exam | 20% |
| Final Exam | 20% |
| Research Project/Lesson | 20% |

Homework assignments will be due throughout the semester. Quizzes will be posted periodically, focused on assigned readings. More details about the homework, the quizzes, activities, and the research project/lesson will be made available during the course.

## Exams

The midterm exam for the course will be available from Friday, July 11, to Monday, July 14, on Canvas. The final exam for the course will be available from Thursday, July 31 to Friday, August 1, on Canvas (the final exam day is officially Friday, August 1). More details about the exams will be available closer to the exam dates.

## ECU Connect

This course uses the ECU CONNECT system to provide information on your performance within the course. For more information, please see https://academic-success.ecu.edu/ecuconnect/

## Student Conduct

Students are expected to abide by the university's Student Honor Code. The homework that you do is a critical part of your education. All students are expected to do their own individual work. That does not mean you are not allowed to discuss your ideas with other students. Working in groups can be beneficial, and I encourage you to talk through ideas with other students. But outright copying is plagiarism and is unacceptable. Students who copy other student's work, or who allow their work to be copied, or who copy their work from other sources, such as the internet, will receive no credit or negative credit for the assignment and may be reported to the university for an academic integrity violation.

Other potential academic integrity violations are cheating, falsification, multiple submissions of the same work in different classes, and attempts at any of these violations. Please see https://osrr.ecu.edu/policies-procedures/ for more details.

Academic integrity violations can result in a grade penalty up to and including an F for the course.

## Incompletes

No incompletes will be issued in this course except for extraordinary circumstances, which generally will be situations where almost all work is complete, this work has been done at an acceptable level of quality, and it is realistic that you can pass the course once the remaining work is completed.

## Other Policies

All homework solutions are due by the posted due date. If, for some reason, you are not able to complete the assignment on time, you must contact me directly with an explanation and request an extension. If something comes up and you are having trouble keeping up with the class, talk to me right away; don't wait until the end of the semester!

Any code needed for the assignments will be distributed using either GitHub repositories, GitLab repositories, or Canvas. Written assignments must instead be scanned as PDFs and uploaded to Canvas.

## Copyright on Course Materials

Course materials, including programming assignments and lecture notes, can only be publicly shared or used for commercial purposes if given permission. This is covered by ECU copyright regulations, available at http://www.ecu.edu/prr/10/40/02, which state the following:

7.1.3. Notes of classroom and laboratory lectures, syllabi, exercises and other course materials taken by Students shall not be deemed Student Works, may only be used for personal educational purposes, and shall not be used for commercialization by the Student generating such notes or by any third party without the express written permission of the author of such Works. Violation of University Policy may be grounds for disciplinary action pursuant with the ECU Student Conduct Process.

## Weather Emergencies

In the event of a weather emergency, information about ECU can be obtained through the following sources:

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| ECU emergency notices | http://www.ecu.edu/alert |
| ECU emergency information hotline | 252-328-0062 |

## Students with Disabilities

East Carolina University seeks to comply fully with the Americans with Disabilities Act. Students requesting accommodations based on a covered disability must go to the Department for Disability Support Services, located in Slay 138, before any accommodations can occur. The telephone number is 252-737-1016.

## Caveats

Occasionally, it may be necessary to revise this syllabus due to extenuating circumstances.  I reserve the right to revise this syllabus if the need arises. If I do so, I will announce this on Canvas.