

# Trustworthy Health Analytics Syllabus

## Course Information

- Santosh Kumar Nukavarapu
- CS 481/581
- Fall 2025
- Delivery mode: asynchronous online
- Office Hours Tuesday 1pm-2pm - Zoom link: <https://odu.zoom.us/j/8830769453>

## Course Description

This project-driven course explores AI integration in healthcare, focusing on building prototype models for prevention, diagnosis, and treatment. Students develop solutions, peer-review projects for ethical concerns, and learn MLOps for AI monitoring and compliance. Emphasizing responsible AI, the course highlights the transformative potential of AI in healthcare while ensuring ethical and secure implementation.

## Prerequisites

None

## Technology Requirements

- Hardware: microphone, speakers
- Software: Microsoft 365, Google Colab

## Course Learning Objectives

At the end of this course, you will be able to:

- **CLO1:** Analyze the role of AI in healthcare for prevention, diagnosis, and treatment, including its benefits and limitations.
- **CLO2:** Design and implement prototype AI models for real-world healthcare applications while ensuring robustness and fairness.
- **CLO3:** Assess AI-driven healthcare solutions for biases, fairness, transparency, privacy, and compliance with regulatory frameworks (e.g., HIPAA, GDPR).
- **CLO4:** Apply MLOps practices to monitor AI models, detect bias shifts, and ensure reproducibility, security, and regulatory compliance.

## Course Schedule

| Week   | Date      | Assignments                            | Due Date    |
|--------|-----------|--|-------------|
| Week 1 | August 24 | Quiz 1<br>Discussion 1<br>Assignment 1 | August 31   |
| Week 2 | August 31 | Quiz 2<br>Discussion 2                 | September 7 |

|        |              |  |              |
|--------|--------------|--|--------------|
|        |              | Assignment 2                           |              |
| Week 3 | September 7  | Quiz 3<br>Discussion 3                 | September 14 |
| Week 4 | September 14 | Quiz 4<br>Discussion 4<br>Assignment 3 | September 21 |
| Week 5 | September 21 | Quiz 5<br>Discussion 5                 | September 28 |
| Week 6 | September 28 | Quiz 6<br>Discussion 6                 | October 5    |
| Week 7 | October 5    | Quiz 7<br>Discussion 7<br>Assignment 4 | October 12   |
| Week 8 | October 12   | Quiz 8<br>Discussion 8                 | October 18   |

## Grading Criteria

In this course, I will calculate your final grade based on the following categories:

| Criteria    | Percentage |
|-------------|------------|
| Quizzes     | 30%        |
| Assignments | 40%        |
| Discussions | 30%        |

## Grading Scale

Letter grades are based on the following percentage scale:

| Percentage | Letter Grade |
|------------|--------------|
| 100–94     | A            |
| 93–90      | A-           |
| 89–87      | B+           |
| 86–83      | B            |
| 82–80      | B-           |
| 79–77      | C+           |
| 76–73      | C            |
| 72–70      | C-           |
| 69–67      | D+           |
| 66–63      | D            |
| 62–60      | D-           |
| Below 60   | F            |

## Policy on Incomplete Grades

A grade of "I" indicates assigned work yet to be completed in a given course, or absence from the final examination, and is assigned only upon instructor approval of a student request. The "I" grade may be awarded only in exceptional circumstances beyond the student's control. The "I" grade becomes an "F" if not removed by the day grades are due for the following term, based on specific criteria: [Incomplete, Withdraws and Z grades](#).

## Expectations

What you can expect from me, as your instructor:

- I will ensure the accuracy of the course content.
- I will provide clear guidelines regarding the course assignments.
- I will be available to answer your questions.
- I will provide meaningful feedback in a timely manner.
- I will do my best to create a worthwhile learning experience for all my students.
- I will follow fair and clear evaluation guidelines for all the course assignments.
- I will do my best to prepare you for exams and assignments.

What I expect from you, as my student:

- You will complete all course readings and assignments in a timely manner.
- You will follow the ODU honor pledge.
- You will follow proper [netiquette](#).
- You will interact with your faculty and classmates professionally and respectfully.
- You will avoid sarcasm and inappropriate language, including the use of ALL CAPS.
- You will acknowledge your classmates' ideas and build on them to contribute to the discussion.

## Course Policies

### Late Assignments

Assignments submitted after the deadline will incur a penalty of 10% per day, up to a maximum of three days. After three days, the assignment will no longer be accepted unless prior arrangements have been made.

### Make-Up Assignments

Make-up opportunities may be granted for missed assignments or exams only in cases of documented emergencies (e.g., illness, family emergencies, military duty). Students must notify the instructor within 48 hours of the missed deadline to request a make-up.

### Course Disclaimer

The course schedule and activities are subject to change. Changes will be posted as Announcements in Canvas.

# University Policies

## Code of Student Conduct and Academic Integrity

The [Office of Student Conduct & Academic Integrity](#) (OSCAI) oversees the administration of the student conduct system, as outlined in the Code of Student Conduct. Old Dominion University is committed to fostering an environment that is: safe and secure, inclusive, and conducive to academic integrity, student engagement, and student success. The University expects students and student organizations/groups to uphold and abide by standards included in the Code of Student Conduct. These standards are embodied within a set of core values that include personal and academic integrity, fairness, respect, community, and responsibility.

## Honor Pledge

By attending Old Dominion University, you have accepted the responsibility to abide by the Honor Pledge:

*I pledge to support the honor system of Old Dominion University. I will refrain from any form of academic dishonesty or deception, such as cheating or plagiarism. I am aware that as a member of the academic community it is my responsibility to turn in all suspected violations of the Honor Code. I will report to a hearing if summoned.*

## Discrimination Policy

The purpose of this policy is to establish uniform guidelines in order to promote a work and education environment that is free from harassment and discrimination, as defined below, and to affirm the University's commitment to foster an environment that emphasizes the dignity and worth of every member of the Old Dominion University community. The [Discrimination Policy](#) details the process to address complaints or reports of retaliation, as defined by this policy.

## Diversity and Inclusion

The [Division of Student Engagement & Enrollment Services](#) values the uniqueness of our Monarch community. The word "engagement" reflects our commitment to embrace the differences in our cultural backgrounds, perceptions, beliefs, traditions, world views, socio-economic status, cognitive and physical abilities.

We will strive to serve as the pre-eminent model for engaging every student to achieve their own success. Our core values are fueled by our responsibility and actions toward community development and engagement, cultural competence and understanding, physical and mental wellness and inclusion for every member of ODU. We will embrace our greatest strength - the diverse composition of our student body and workforce. For more information regarding diversity and inclusion, please visit the [Office of Intercultural Relations](#).

## Educational Accessibility and Accommodations

Old Dominion University is committed to ensuring equal access to all qualified students with disabilities in accordance with the Americans with Disabilities Act. The [Office of Educational Accessibility](#) (OEA) is the campus office that works with students who have disabilities to provide and/or arrange reasonable accommodations.

The [Accommodations for Students with Disabilities](#) define the procedures used to accommodate student with disabilities. Students are encouraged to self-disclose disabilities that the Office of Educational Accessibility has verified by providing Accommodation Letters to their instructors early in the semester to start receiving accommodations. Accommodations will not be made until the Accommodation Letters are provided to instructors each semester.

### University Email Policy

With the increasing reliance and acceptance of electronic communication, email is considered an official means for University communication. Old Dominion University provides each student an email account for the purposes of teaching and learning, research, administration, and service. It is the responsibility of every eligible student to activate MIDAS, the Monarch Identification and Authorization System, to obtain email access. It is important that all students are aware of the expectations associated with email use as outlined in the [Student Email Standard](#). The email account provided by the University is considered to be an official point of contact for correspondence. Students are expected to check their official e-mail account on a frequent and consistent basis to stay current with University communications. Mail sent to the ODU email address may include notification of University-related actions, including academic, financial, and disciplinary actions. For more information about student email, please visit [Student Computing](#).

### Withdrawal

A syllabus constitutes an agreement between the student and the course instructor about course requirements. Participation in this course indicates your acceptance of its teaching focus, requirements, and policies. Please review the syllabus and the course requirements as soon as possible. If you believe that the nature of this course does not meet your interests, needs or expectations, if you are not prepared for the amount of work involved – or if you anticipate assignment deadlines or abiding by the course policies will constitute an unacceptable hardship for you – you should drop the course by the drop/add deadline, which is listed in the [ODU Schedule of Classes](#). For more information, please visit the [Office of the University Registrar](#).

### Privacy of Student Information

Old Dominion University recognizes its duty to uphold the public's trust and confidence, not only in following laws and regulations, but in following high standards of ethical behavior. Members of the Old Dominion University community are responsible for maintaining the highest ethical standards and principles of integrity. The [Code of Ethics](#) is a set of values-based statements that demonstrate the University's commitment to this goal. The [Privacy of Student Information](#) details Family Educational Rights & Privacy Act (FERPA), along with other information regarding privacy.