## *Course Syllabus: Fall 2021*

**Class Information**

- CS 4375 Introduction to Machine Learning
- Tuesday/Thursday 4:00 – 5:15 pm
- ECSS 2.412

**Class Resources. This is an in-person class with online supplemental resources.**

- **eLearning**: We will use eLearning for the grade book, links to quizzes, and links to upload assignments.
- **YouTube**: Content lectures are on YouTube in the Machine Learning playlist on my channel: https://www.youtube.com/user/JaniceMazidi
  - o This content duplicates what I will cover in class, so you are not required to watch the videos. However, the videos can be helpful if you miss a class or want a short refresher on a topic.
- **Piazza:** We will use Piazza for asynchronous class discussion, announcements, homework instructions, etc.
  - o Rather than emailing questions to me or the TA, please post your questions on Piazza so that everyone has the same information.
  - o Piazza also has a free android/iphone app.
  - o Sign up here: piazza.com/utdallas/fall2021/cs4375mazidi

**Note:** This is an  upper-level computer science course with many programming assignments. Non-CS majors are strongly cautioned against taking the course if you do not have a strong programming background.

**Professor Contact Information**

- Dr. Karen Mazidi
- Email: Karen.Mazidi@utdallas.edu
- Office: ECSS 3.203
- Office phone: 972-883-3868
- Office hours: Monday through Thursday 5:30-6:00 pm by phone or Teams

**TA Information**

TBD

**Course Pre-requisites**

CS/SE 3341 (Probability and Statistics in CS) and CE/CS/SE/TE 3345 (Data Structures and Algorithms)

**Course Description**

CS 4375 Introduction to Machine Learning (3 semester credit hours) Algorithms for creating computer programs that can improve their performance through learning. Topics include: cross-validation, decision trees, neural nets, statistical tests, Bayesian learning, computational learning theory, instance-based learning, reinforcement learning, bagging, boosting, support vector machines, Hidden Markov Models, clustering, and semi-supervised and unsupervised learning techniques.

**Student Learning Objectives/Outcomes**

Ability to understand and apply the following concepts in machine learning:
1. Decision trees
2. Neural networks
3. Bayesian learning
4. Instance-based Learning
5. Hidden Markov models
6. Clustering
7. Reinforcement learning

**Required Reading and Software:**

Notes in pdf form will be provided.

We will be using R and Python for this course. Installation instructions will be provided in class. At least one assignment uses C++.

**Grading and Course Deliverables**

Course grade is composed of:

- 35% - homework and projects; approximately 10 assignments
- 45% - 3 exams; 15% each
- 20% - quizzes; at least one a week
- Letter grades will be assigned according to the UTD +/- conventions.
  - 0,1,2,3 minus
  - 4,5,6 neither plus nor minus
  - 7,8,9 plus

## Course & Instructor Policies

- Assignments must be turned in on the due date, by 11:59 pm.
- Late assignments are deducted by 10% on the first and second days late. After two days, the assignment will not be accepted.
- Quizzes are not accepted late.
- Makeup exams are not given unless prior permission has been granted due to extenuating circumstances.
- Do not turn in code or other work that is not your own. Discussion and collaboration are good things, turning in someone else's work as your own is not.
- **If you do not agree with a grade you have been given, you must make your case within a week of receiving the grade or the grade stands as is.**

## Comet Creed

*This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:*

"As a Comet, I pledge honesty, integrity, and service in all that I do."

## Academic Support Resources

The information contained in the following link lists the University's academic support resources for all students. Please go to Academic Support Resources webpage for these policies.

## Classroom Conduct Requirements Related to Public Health Measures

UT Dallas will follow the public health and safety guidelines put forth by the Centers for Disease Control and Prevention (CDC), the Texas Department of State Health Services (DSHS), and local public health agencies that are in effect at that time during the Fall 2021 semester. Public health measures may be required for class participation (e.g., wearing of masks, social distancing) and students who refuse to comply may face disciplinary action for Student Code of Conduct violations.

Students who have tested positive for COVID-19 or may have been exposed should not attend class in person and should instead follow required disclosure notifications as posted on the university's website (see "What should I do if I become sick?" webpage)

## UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

***The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.***