

***Course Syllabus: Spring 2023***

**Class Information**

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

|  |  |
| --- | --- |
| • | ECSS 2.305 |

**Professor Contact Information**

•Dr. Karen Mazidi   
•Email: Karen.Mazidi@utdallas.edu   
•Office: ECSS 3.203   
•Office phone: 972-883-3868 (goes directly to Teams)   
•Office hours: Monday, Wednesday 5:30 – 6:00 pm or by appointment

**TA Information**   
TBD

**Class 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   
 oThis 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.

•**GitHub**: Code samples and other course materials are available on the GitHub for this class:   
https://github.com/kjmazidi/Machine\_Learning\_2nd\_edition

**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.

|  |  |
| --- | --- |
| *Course Syllabus* | *Page 1* |



**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. Two assignments use C++.

**Grading**

Course grade is composed of:

|  |  |  |  |
| --- | --- | --- | --- |
| • | 70% - Class portfolio assignments, about one per week | | |
| • | 20% - quizzes; at least one a week | | |
| • | 10% - attendance/participation | | |
| • | there are no exams | | |
| • | Letter grades will be assigned according to the UTD +/- conventions. The eLearning | | |
| system does not round up. | | | |
| • | | 0,1,2,3 minus | |
| • | | 4,5,6 neither plus nor minus | |
| • | | 7,8,9 plus | |
| *Course Syllabus* | | | *Page 2* |



**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.

• 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.

**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.***

*Course Syllabus*  *Page 3*