UTD   **Course Syllabus**

Course Information:
- Course Number: CS6375, Section 002 (M/W 2:30pm – 3:45pm, ECSS 2.306)
- Course Title: Machine Learning
- Credit Hours: 3
- Term: Spring 2016

Professor and TA Contact Information:
- Name: Anjum Chida
- Phone: (972) 883-2185
- Office Location: ECSS 4.403
- Office Hours: M/W 1:30 pm – 2:30 pm; T/Th 10 am – 11:30 am (or by appointment)
- Email: anjum.chida@utdallas.edu
- TA: TBD

Course Pre-Requisites, co-requisites, and/or other restrictions:
CS5343 Algorithm Analysis and Data Structures. You are expected to have basic programming skills as well as knowledge of elementary data structures and probability theory

Course Description:
The main objective of this course is to introduce students to machine learning, the study of computer systems that improve their performance automatically through experience. Students will learn the latest machine learning algorithms and models that constitute typical machine learning systems. They will also gain the necessary foundations and background to both build practical machine learning systems and conduct research in machine learning.

Student Learning Objectives/Outcomes
Ability to understand and apply basic learning algorithms
Ability to understand and apply computational learning theories
Ability to understand and apply advanced learning algorithms

Required Textbooks and Materials
Machine Learning by Tom Mitchell.
Machine Learning: a Probabilistic Perspective by Kevin Murphy.
Pattern Recognition and Machine Learning by Christopher M. Bishop.

Assignments & Academic Calendar

Assignments will be through eLearning. For academic calendar see:
https://www.utdallas.edu/academiccalendar/files/AcademicCalendarSpring2016.pdf

Class	Date	Material Covered
1, 2	Jan 11, 13	Introduction
3, 4	Jan 18*, 20	Induction Learning
5, 6	Jan 25, 27	Decision Tree
7, 8	Feb 1, 3	Naïve Bayes
9, 10,	Feb 8, 10,	Logical Regression and Linear Regression
11,12	Feb 15, 17	Perceptron ; Neural Networks
13, 14, 15	Feb 22, 24, 29	Instance Based Learning
16	**Mar 2**	**EXAM 1**
17, 18	Mar 7, 9	Support Vector Machines
March 14 – 19		Spring break
19, 20	March 21, 23	Unsupervised Learning and Clustering
21, 22	March 28, 30	Bayesian Networks
23, 24	Apr 4, 6	Computational Learning Theory
25, 26	Apr 11, 13	Project Demo
27, 28	Apr 18, 20	Project Demo
29, 30	Apr 25, 27	Project Demo
TBD		**Exam 2**

Tentative Test Dates:

      Exam 1:   March 2nd

      Exam 2:   TBD

Grading Policy:

The grade will be determined as described below. No other bonus work, make-up work, dropped scores, or other means of raising your grade should be expected. At the end of the semester, it is possible that grades may be curved, but a curve should not be expected.

Exam 1	25%
Exam 2	30%
Class Participation	5%
Assignment Average	25%
Term Project	15%

Letter grades are determined using the standard 10-point range for each letter, then dividing this range into three equal parts to determine the +/- designation.

Course & Instructor Policies:

Assignments and projects must be turned in on time. Each day late will result in a deduction of 10 points. It is your responsibility to upload your work early enough to avoid possible problems uploading to eLearning. It is your responsibility to ensure that you have submitted the correct items. It is recommended that you double-check your submission to ensure it is correct.

Exams must be taken on time. Exceptions require advance approval by the instructor. It is up to the instructor to determine whether an exception will be made, and will depend largely on proof of extraordinary circumstances. Otherwise, a missed exam will either incur a substantial penalty or be recorded as a zero.

Exams have time limits. Students who continue to write on the exam after time is called or who start writing before the exam begins are subject to a penalty.

Students are expected to attend all class lectures. If absent, the student is still responsible for any material covered or anything said which the student missed.

All assignments, projects and exams are to be individual efforts. You are not to collaborate with other students, or to discuss solutions with other students prior to submission. Copying of assignments, projects and exams, in whole or in part, from other students in this semester or previous semesters will be considered to be an act of scholastic dishonesty.

Grades are not based on needs or consequences, but are based only on performance.

STUDENT CONDUCT & DISCIPLINE:

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

ACADEMIC INTEGRITY:

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

EMAIL USE:

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with

university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

WITHDRAWAL FROM CLASS:

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

STUDENT GRIEVANCE PROCEDURES:

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's Handbook of Operating Procedures.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the deal will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

INCOMPLETE GRADE POLICY:

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of F.

DISABILITY SERVICES:

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:

The University of Texas at Dallas, SU 22
PO Box 830688
Richardson, Texas 75083-0688
(972) 883-2098 (voice or TTY)
Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

RELIGIOUS HOLY DAYS:

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated. The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

These descriptions and timelines are subject to change at the discretion of the Professor.

Syllabus Addendum

Each student in this course is expected to exercise independent scholarly thought, expression and aptitude. This addendum to the course syllabus is provided to assist you in developing and maintaining academic integrity while seeking scholastic success.

General Comments:

- All academic exercises (including assignments, essays, laboratory experiments and reports, examinations, etc.) require individual, independent work. Any exception(s) will be clearly identified.
- Be sure your name or identifying number is on your paper.
- Complete and turn in academic exercises on time and in the required format (hardcopy, electronic, etc.).
- Retain confirmation of document delivery if submitted electronically.
- Retain all research notes and drafts until the project or assignment has been graded.
- Obtain written authorization from your instructor prior to submitting a portion of academic work previously submitted for any academic exercise. (This includes an individual or group project submitted for another course or at another school.)

Essays and Significant Papers:

Be prepared
- To present periodic drafts of work in process
- To correctly and completely reference all sources of information using the citation format prescribed
- To turn your completed assignment in timely and in the prescribed manner (electronic, hardcopy, etc.)

Examinations:

Be prepared
- To leave all personal belonging at the front of the room or other designated location (this includes cell phones, turned off of course, and beverage containers)
- To present your UTD Comet Card
- To remove your cap or hat
- To remove the batteries from any electronic device (e.g. calculator)
- To change seating
- To sign out when exiting the testing room
- To be escorted for lavatory use

All episodes of suspected scholastic dishonesty will be reported according to University policy. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since such dishonesty harms the individual, all students and the University, policies on scholastic dishonesty will be strictly enforced. Penalties that may be assessed for scholastic dishonesty may be reviewed in *Subchapter D. Penalties* at http://www.utdallas.edu/student/slife/chapter49.html

These descriptions and timelines are subject to change at the discretion of the Professor.