



CSCI 527.01W ADVANCED DATABASES AND DATA MINING

COURSE SYLLABUS: SPRING 2017

INSTRUCTOR INFORMATION

Instructor: Dr. Truong Huy Nguyen

Office Location: JOUR 238

Office Hours: WR 1:30-4:30pm or by appointment

Office Phone: (903) 886-5403

Office Fax: (903) 886-5404

University Email Address: Truong-Huy.Nguyen@tamuc.edu

Preferred Form of Communication: Email

Communication Response Time: 24 hours

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Textbook(s) Required

“Practical Applications of Data Mining: Methods and Practices,” Sang C. Suh, Jones and Bartlett Publishers, ISBN-13: 9780763785871, 2011.

Software Required

None

Optional Texts and/or Materials

[1] Bhavani Thuraisingham. Data Mining: Technologies, Techniques, Tools, and Trends, CRC Press (1999).

[2] Gordon S. Linoff and Michael J. A. Berry. Mining the Web, Wiley (2001).

[3] Tapio Eloma, Heikki Mannila, and Hannu Toivonen (Editors). Principles of Data Mining and Knowledge Discovery, Springer (2002).

The syllabus/schedule are subject to change.

[4] Stephan Kudyba and Richard Hoptroff. Data Mining and Business Intelligence: A Guide to Productivity, IDEA Group Publishing (2001).

[5] Jiawei Han, Micheline Kamber, and Jian Pei. Data Mining: Concepts and Techniques, 3rd Edition, Morgan Kaufmann (2011).

Course Description

Hours: 3

The course presents comprehensive introduction to data mining techniques and provides the students with necessary background for the application of data mining to real problems. Topics include data processing, classification, predictive modeling, association analysis, clustering, statistical data mining, and fuzzy logic.

Prerequisite: CSCI 526

Student Learning Outcomes (Should be measurable; observable)

- Gain a working knowledge of data mining techniques
- Learn to design and implement algorithms to apply techniques in a practical fashion
- Understand which algorithms to apply to what kind of database problems to obtain desired useful knowledge about the data

COURSE REQUIREMENTS

Minimal Technical Skills Needed

Students must know how to use the learning management system (i.e., eCollege). Students should be familiar with Power Point Presentation design, basic database entry; it is also very helpful to be familiar with R-language and/or Matlab.

Instructional Methods

The text for the class will be covered in this class using the text author's slides modified, animated and highlighted by the course instructor.

Student Responsibilities or Tips for Success in the Course

By the end of the semester, students should have read the assigned chapter sections, studied the presentations, taken quizzes, participated in discussions and have spent some time to be certain they have a general understanding of the reference material in the appendices. The table of contents of the text is basically an outline for the course. All quiz activity, required discussion inputs, and any other assignments are provided to the student as each class unit is opened and the week progresses.

GRADING

Final grades in this course will be based on the following scale:

The syllabus/schedule are subject to change.

- A = 90%-100%
- B = 80%-89%
- C = 70%-79%
- D = 60%-69%
- F = 59% or Below

Final score will be out of 100, and the above percentages will be applied to student's total score to determine the letter grade

Assessments

Discussions	10%
One midterm exam	25%
Projects	40%
One final exam	25%

You should do your own work on exams/projects and assignments. Copying another student's work or internet resources verbatim is not acceptable and constitutes cheating and plagiarism behavior. Any detection of cheating and/or plagiarism on an exam/assignment/project will lead to an automatic 0 (zero) for the exam/assignment/project for all students involved. Moreover, based on cheating and plagiarism activity in any section of class, the instructor holds the right to give a final F grade to the identified student(s). For codes submitted in assignments/projects, you may be required to explain the code you submitted. In case of discursive explanation, the instructor holds the right to lower your grade.

The professor reserves the rights to reward students for continuous hard work or for an exceptional novel scientific work (as judged by the instructor) relevant to the topics covered. The exams are to be written on paper.

TECHNOLOGY REQUIREMENTS

- To fully participate in online courses you will need to use a current Flash enabled internet browser. For PC and Mac users the suggested browser is Mozilla Firefox.
- You will need regular access to a computer with a broadband Internet connection. The minimum computer requirements are:
 - 512 MB of RAM, 1 GB or more preferred
 - Broadband connection required courses are heavily video intensive
 - Video display capable of high-color 16-bit display 1024 x 768 or higher resolution
- You must have a:
 - Sound card, which is usually integrated into your desktop or laptop computer
 - Speakers or headphones.

The syllabus/schedule are subject to change.

- *For courses utilizing video-conferencing tools and/or an online proctoring solution, a webcam and microphone are required.
- Both versions of Java (32 bit and 64 bit) must be installed and up to date on your machine. At a minimum Java 7, update 51, is required to support the learning management system. The most current version of Java can be downloaded at: [JAVA web site http://www.java.com/en/download/manual.jsp](http://www.java.com/en/download/manual.jsp)
- Current anti-virus software must be installed and kept up to date.
- Run a browser check through the Pearson LearningStudio Technical Requirements website. [Browser Check http://help.ecollege.com/LS_Tech_Req_WebHelp/en-us/#LS_Technical_Requirements.htm#Browse](http://help.ecollege.com/LS_Tech_Req_WebHelp/en-us/#LS_Technical_Requirements.htm#Browse)

Running the browser check will ensure your internet browser is supported.

Pop-ups are allowed.

JavaScript is enabled.

Cookies are enabled.

- You will need some additional free software (plug-ins) for enhanced web browsing. Ensure that you download the free versions of the following software:
 - [Adobe Reader https://get.adobe.com/reader/](https://get.adobe.com/reader/)
 - [Adobe Flash Player \(version 17 or later\) https://get.adobe.com/flashplayer/](https://get.adobe.com/flashplayer/)
 - [Adobe Shockwave Player https://get.adobe.com/shockwave/](https://get.adobe.com/shockwave/)
 - [Apple Quick Time http://www.apple.com/quicktime/download/](http://www.apple.com/quicktime/download/)
- At a minimum, you must have Microsoft Office 2013, 2010, 2007 or Open Office. Microsoft Office is the standard office productivity software utilized by faculty, students, and staff. Microsoft Word is the standard word processing software, Microsoft Excel is the standard spreadsheet software, and Microsoft PowerPoint is the standard presentation software. Copying and pasting, along with attaching/uploading documents for assignment submission, will also be required. If you do not have Microsoft Office, you can check with the bookstore to see if they have any student copies.
- For additional information about system requirements, please see: [System Requirements for LearningStudio https://secure.ecollege.com/tamuc/index.learn?action=technical](https://secure.ecollege.com/tamuc/index.learn?action=technical)

ACCESS AND NAVIGATION

Pearson LearningStudio (eCollege) Access and Log in Information

This course will be facilitated using Pearson LearningStudio, the learning management system used by Texas A&M University-Commerce. To get started with the course, go to

The syllabus/schedule are subject to change.

[myLeo](#) and from the top menu ribbon select eCollege. Then on the upper left side of the screen click on the My Courses tab. <http://www.tamuc.edu/myleo.aspx>

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

Note: It is strongly recommended you perform a “Browser Test” prior to the start of your course. To launch a browser test login to Pearson LearningStudio, click on the My Courses tab, and then select the Browser Test link under Support Services.

Pearson LearningStudio Student Technical Support

Texas A&M University-Commerce provides students technical support for the use of Pearson LearningStudio.

Technical assistance is available 24/7 (24 hours, 7 days a week).

If you experience LearningStudio (eCollege) technical problems, contact the LearningStudio helpdesk at 1-866-656-5511 (toll free) or visit [Pearson 24/7 Customer Support Site](http://247support.custhelp.com/) <http://247support.custhelp.com/>

The student help desk may be reached in the following ways:

- **Chat Support:** Click on '*Live Support*' on the tool bar within your course to chat with a Pearson LearningStudio Representative.
- **Phone:** 1-866-656-5511 (Toll Free) to speak with Pearson LearningStudio Technical Support Representative.

Accessing Help from within Your Course: Click on the '*Tech Support*' icon on the upper left side of the screen inside the course. Then you will be able to get assistance via online chat or by phone.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

Policy for Reporting Problems with Pearson LearningStudio

Should students encounter Pearson LearningStudio based problems while submitting assignments/discussions/comments/exams, the following procedure must be followed:

The syllabus/schedule are subject to change.

1. Students must report the problem to the help desk. You may reach the helpdesk at 1-866-656-5511.
2. Students must file their problem with the helpdesk and obtain a helpdesk ticket number
3. Once a helpdesk ticket number is in your possession, students should email me to advise me of the problem and provide me with the helpdesk ticket number.
4. I will call the helpdesk to confirm your problem and follow up with you

PLEASE NOTE: Your personal computer and internet access problems are not a legitimate excuses for filing a ticket with the Pearson LearningStudio Help Desk. Only Pearson LearningStudio based problems are legitimate reasons to contact the Help Desk.

You strongly are encouraged to check for your internet browser compatibility **BEFORE** the course begins and take the Pearson LearningStudio tutorial offered for students who may require some extra assistance in navigating the Pearson LearningStudio platform.

myLeo Support

Your myLeo email address is required to send and receive all student correspondence. Please email helpdesk@tamuc.edu or call us at 903-468-6000 with any questions about setting up your myLeo email account. You may also access information at [myLeo](https://leo.tamuc.edu).
<https://leo.tamuc.edu>

Learner Support

The [One Stop Shop](http://www.tamuc.edu/admissions/onestopshop/) was created to serve you by providing as many resources as possible in one location. <http://www.tamuc.edu/admissions/onestopshop/>


The [Academic Success Center](http://www.tamuc.edu/campusLife/campusServices/academicSuccessCenter/) provides academic resources to help you achieve academic success.

<http://www.tamuc.edu/campusLife/campusServices/academicSuccessCenter/>

FREE Mobile APPS

The Courses apps for phones have been adapted to support the tasks students can easily complete on a smaller device. Due to the smaller screen size course content is not presented.

The Courses app is free of charge. The mobile Courses Apps are designed and adapted for different devices.

	App Title:	iPhone – Pearson LearningStudio Courses for iPhone Android – LearningStudio Courses - Phone
	Operating System:	iPhone - OS 6 and above Android – Jelly Bean, Kitkat, and Lollipop OS
	iPhone App URL:	https://itunes.apple.com/us/app/pearson-learningstudio-courses/id977280011?mt=8

The syllabus/schedule are subject to change.

	Android App URL:	https://play.google.com/store/apps/details?id=com.pearson.lsphone
--	-------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------

Once downloaded, search for Texas A&M University-Commerce, and it should appear on the list. Then you will need to sign into the myLeo Mobile portal.

The Courses App for Android and iPhone contain the following feature set:

- View titles/code/Instructor of all Courses enrolled in online
- View and respond to all discussions in individual Courses
- View Instructor Announcements in individual Courses
- View Graded items, Grades and comments in individual Courses
- Grade to Date
- View Events (assignments) and Calendar in individual Courses
- View Activity Feed for all courses
- View course filters on activities
- View link to Privacy Policy
- Ability to Sign out
- Send Feedback

LearningStudio Notifications

Students can be alerted to course activities via text on their mobile phones or up to two email addresses.

Based on their preferences, students can automatically receive a push notification with every new: course announcement, threaded discussion post, grade, and/or assignment without having to login to the course. Enrolled students will automatically receive email notifications for announcements and can opt out of this feature. To receive text notifications, students must opt in.

To begin setting up notifications, go into your course in LearningStudio and click on the bell-shaped Notifications icon on the main menu ribbon.

By default the student's university email address will appear. This cannot be changed in LearningStudio. Additional email addresses may be added by clicking the Add button. After all of the other selections are completed be sure to click the Save and Finish button.

COMMUNICATION AND SUPPORT

Interaction with Instructor Statement

The instructor's communication response time is within 24 hours and feedback on assessments are stated clearly.

The syllabus/schedule are subject to change.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

Attendance: Since this is an online learning course, each student is expected to regularly login to the course website at TAMUC eCollege. You will be required to login regularly each week to view a unit presentation, to take a quiz or to submit a discussion. It is expect that you will need to spend approximately 3-6 hours a week watching the presentations, completing quizzes and submitting discussion requirements. This will bring your class time roughly equivalent to the weekly class attendance required for an on-campus class.

You must watch for changed announcements posted in eCollege or in emails to know when something has been updated. Your activity on e-College web site is monitored and you will get instructor emails if you become deficient in your attendance or assignments.

Late Policy: Quizzes, Homework Assignments and Discussions must be accomplished in the Unit specified by the date given and submitted according to the e-college online process. There will be a 20% reduction each day after the due date. Assignment will not be accepted 3 days past the due date.

Make-up Policy: Make-up will be permitted only in the case of having and providing me a formal Institution excuse.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.tamuc.edu/admissions/registrar/documents/studentGuidebook.pdf>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: [Netiquette](#)

<http://www.albion.com/netiquette/corerules.html>

CHEATING WILL NOT BE TOLERATED.

The syllabus/schedule are subject to change.

TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

ADA Statement

Students with Disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce

Gee Library- Room 132

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: StudentDisabilityServices@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

The syllabus/schedule are subject to change.

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web URL:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

COURSE OUTLINE / CALENDAR

Schedule (Tentative)

WEEK	TOPIC
1	Introduction to Data Mining
2-3	Association Rules
4	Classification Rules: Separate and Conquer
5	Classification Rules: Divide and Conquer
6	Neural Networks
7	Review
8	Midterm Exam
9	Fuzzy Logic
10-11	Clustering
12-13	Statistical Data Mining
14	Bayes Theorem and Rough Sets

The syllabus/schedule are subject to change.

*The week number does not count Spring Break.