

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit [www.tamuc.edu/counsel](http://www.tamuc.edu/counsel)



## CSCI, 573, 01W, Big Data Computing and Analytics

COURSE SYLLABUS: Fall 2021

### INSTRUCTOR INFORMATION

Instructor:	Dr. Srujan Kotikela, Assistant Professor
Office Location:	ACB2 #210
Office Hours:	Tuesday & Thursday 9AM – 12PM, Other times by appointment
Office Phone:	979-317-3429
Office Fax:	N/A
University Email Address:	srujan <b>dot</b> kotikela <b>at</b> tamuc <b>dot</b> edu
Preferred Form of Communication:	<b>EMAIL subject must contain</b> Fall 2021 - (CSCI-573-01W)
Communication Response Time:	Email response within 1~2 business days

### COURSE INFORMATION

**Lecture/video: Wed 4:30PM – 6:00PM on D2L**

**Text book: None required. Use any text book of your choice for reference or look up information on internet.**

### Course Description

The goal of this course is to study modern technologies that are used to construct bigdata computing systems and methods and tools for big-data analytics. The course is designed to be student-driven and interactive. It would be based on student presentations of selected research papers on big data coupled with instructor-led lectures. There would be hands-on practice by installing and configuring software used for big-data computing and analytics, especially Apache Spark framework with Python programming language. Students will learn to create programs running over a distributed setting.

*The syllabus/schedule are subject to change.*

## **Student Learning Outcomes**

1. to understand big data computing paradigms
2. to understand big data storage issues
3. to understand big data analytic issues
4. to review recent trends in big data research
5. to be familiar with Apache Spark framework and Python programming language
6. to identify big data problems and develop analytic solution on Apache Spark framework

## **COURSE REQUIREMENTS**

### **Minimal Technical Skills Needed**

Students should be able to study independently and have strong implementation skills. Students should be also familiar with basic Linux shell commands and system skills. Students are expected to have strong background in both mathematics and computer systems.

### **Instructional Methods and University's Pandemic Response**

Face-to-face lectures and lab will be given every week in the class room. Students are supposed to download assignments online and submit them on time. Students are also encouraged to utilize discussion boards for Q&A.

A&M-Commerce requires the use of face-coverings in all instructional and research classrooms/laboratories. Exceptions may be made by faculty where warranted. Faculty have management over their classrooms. Students not using face-coverings can be required to leave class. Repetitive refusal to comply can be reported to the Office of Students' Rights and Responsibilities as a violation of the student Code of Conduct.

Students should not attend class when ill or after exposure to anyone with a communicable illness. Communicate such instances directly with your instructor. Faculty will work to support the student getting access to missed content or completing missed assignments.

### **Student Responsibilities or Tips for Success in the Course**

Assignments will be announced on myLeoOnline. It is students' responsibility to keep up with the schedule. No makeup exams or assignments.

## **GRADING**

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

A = 90%-100%

B = 80%-89%

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C = 70%-79%  
D = 60%-69%  
F = 59% or Below

## Assessments

Basis for Evaluation:  
Paper presentation/Participation 25%  
Assignments/Final Project 45% Final  
Exam 30%

## TECHNOLOGY REQUIREMENTS

### LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

[https://documentation.brightspace.com/EN/brightspace/requirements/all/browser\\_support.htm](https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm)

YouSeeU Virtual Classroom Requirements:

<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-SystemRequirements>

## ACCESS AND NAVIGATION

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](mailto:helpdesk@tamuc.edu).

**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.

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## **COMMUNICATION AND SUPPORT**

If you have any questions or are having difficulties with the course material, please contact your Instructor.

### **Technical Support**

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

### **Interaction with Instructor Statement**

The instructor will make an effort to answer questions in a timely manner.

## **COURSE AND UNIVERSITY PROCEDURES/POLICIES**

### **Course Specific Procedures/Policies**

You should do your own work on exams and for programming assignments. Copying another student's work is not acceptable. Any indication of cheating or plagiarism on an exam/assignment will result in an automatic 0 (zero) for the exam/assignment for all students involved. Yet, based on cheating and plagiarism activity in any section of class, instructor holds the right to give F grade to the identified student(s). Regarding codes in assignments, you may be required to explain the code you submitted. In case of discursive explanation, the instructor holds the right to lower your grade. No makeup exams or assignments unless documents explaining emergency are provided.

### **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/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx).  
<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

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

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<https://www.britannica.com/topic/netiquette>

### **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>

### **Students with Disabilities-- ADA Statement**

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 162

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

Fax (903) 468-8148

Email: [studentdisabilityservices@tamuc.edu](mailto:studentdisabilityservices@tamuc.edu)

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

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

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## **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&MCommerce campuses. Report violations to the University Police Department at 903886-5868 or 9-1-1.

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## **COURSE OUTLINE / CALENDAR**

- Week 1: introduction to big data and data science
- Week 2: performing data science and preparing data
- Week 3: Python language review
- Week 4: big data, hardware trends, and Apache Spark
- Week 5: Spark essentials, student presentation
- Week 6: Spark essentials, student presentation
- Week 7: tutorial session, student presentation
- Week 8: tutorial session, student presentation
- Week 9: semi-structured data, student presentation
- Week 10: semi-structured data, student presentation
- Week 11: structured data, student presentation
- Week 12: data quality, student presentation
- Week 13: data quality, student presentation
- Week 14: tutorial session/code reviews, student presentation
- Week 15: distributed machine learning in Spark, student presentation
- Week 16: final exam

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