Syllabus
CSCI 503 - Trusted Artificial Intelligence and Autonomous Systems
East Texas A&M University
Summer I 2026

Instructor: Dr. Mohammad Alsmirat
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Communication Response Time: 24 hours
Office Hours: Online through MS teams on Tuesday, 12:00 pm – 2:00 pm or by appointments.

Meeting Time and Place

Web Based Class. All course related material and videos will be posted on D2L Course page.

Recommended Textbooks

- All required reading material will be posted on D2L Course page.

Recommended references

- Introduction to Autonomous Robots: Mechanisms, Sensors, Actuators, and Algorithms, by Nikolaus Correll, Bradley Hayes, Christoffer Heckman, and Alessandro Roncone, The MIT Press, 2021.
- Verifiable Autonomous Systems: Using Rational Agents to Provide Assurance about Decisions Made by Machines, by LOUISE A. DENNIS and MICHAEL FISHER, Cambridge University Press, 2023.
- Trustworthy Machine Learning, Kush R. Varshney, Independently Published, ISBN 979-8-41-190395-9, 2022

Prerequisite

- None

Course Objectives

This course explores the critical intersection of trustworthiness and autonomy in the age of artificial intelligence. It offers insights into the core principles of autonomous AI, emphasizing transparency, explainability, fairness, and robustness. Students will engage with real-world case studies, explore regulatory landscapes, and partake in hands-on labs to apply theoretical knowledge. This course prepares students to design, evaluate, and manage trustworthy autonomous technologies in our AI-driven world.

Topics:

Topics to be covered (as time permits):

- Introduction to AI and Machine Learning

- Introduction to Autonomous Systems and Robotics
- Introduction to Generative AI
- Introduction to AI powered Autonomous Systems
- Designing Autonomous system lifecycle
- Introduction to trustworthy AI
- Understandable AI
- Trustworthy Machine Learning
- Verifiable Autonomous systems
- Ethical approaches in designing autonomous and intelligent systems
- Case Study: Self Driving Vehicle
- Case Study: Robotic Personal Assistant

Course Outcomes

Upon completion of this course, students will:

- Explain what autonomous systems are.
- Identify AI powered autonomous systems.
- Describe core principles of autonomous AI.
- Identify different aspects of trustworthy AI.
- Explain and document real word case studies of trustworthy autonomous systems.

Assignments

There will be a number of written and programming assignments and projects. Assignments details will be posted on D2L.

East Texas A&M University acknowledges that there are legitimate uses of Artificial Intelligence, chatbots, or other software that has the capacity to generate code, and textual answers. Any use of such software is allowed unless otherwise stated clearly and should be always cited clearly. AI can be used to help you with writing and should not be used to form your ideas.

Grading

- Weekly Quizzes (4 at the end of weeks 1,2,3,4): 24% of the grade
- Assignments (4 at the end of weeks 1,2,3,4): 24% of the grade
- Project: 27% of the grade
- Final Exam (comprehensive): 25% of the grade

Letter grades will be determined using a standard percentage of points scale:

Letter Grade	Cut-off Score
A	90%
B	80%
C	70%
D	60%
F	Below 60%

Doing all your assignments and project will help the borderline cases. Check your grades often. Any score may be disputed up to seven (2) days after the score is posted.

Technology Requirements - LMS

All course sections offered by East Texas A&M University 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

YouSeeU Virtual Classroom Requirements:
https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements

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.

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.

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

Methods of Instruction

The course will consist mainly of recorded lectures and reading material. Important material from the text and outside sources will be covered during the lecture. Therefore, watching the lectures are essential for success. Students will benefit from attending one of the weekly office hours and asking questions if any of the material or assignment is not clear.

This syllabus contains an overview of what will be covered in class; for specific information, students are referred to the class web page maintained on D2L course management system. The course web page will contain lectures, assignments, project information and supporting material. Information on D2L will be updated frequently so it is a good idea to check it regularly. Assignments are posted on D2L and should be submitted through D2L.

Late Submissions Policy

All work submitted electronically must be submitted by midnight of the due date. Late work will be deducted by 10% for each day past the due date. The assignment will not be accepted after 2 days from the due date.

Tips for Success in the Course

- Watch the recorded lecture video, and make sure to ask questions if the material is not clear.
- Read all assigned reading and supplemental materials.
- Check D2L at least once a day.
- Practice the examples and practice exercise we go through during the lectures.
- Start your homework & project assignments early.
- Do your own work. Do not copy other's work.
- Contact the instructor if you have difficulties in lecture material and the assignments.

Make-up Policy

No individual make-up test will be permitted except in the case of a formal institutional excuse. There will be no makeup for assignment deliverables.

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.

Tentative Course Outline

Week	Content
1	• Course overview • Introduction to Autonomous Systems and Robotics • Introduction to Generative AI
2	• Introduction to AI powered Autonomous Systems • Designing Autonomous system lifecycle • Introduction to trustworthy AI
3	• Understandable AI • Trustworthy Machine Learning
4	• Verifiable Autonomous systems • Ethical approaches in designing autonomous and intelligent systems
5	• Case Study: Self Driving Vehicle • Case Study: Robotic Personal Assistant

The course outline will adapt to the actual progress of the classes and may not be accurately the same as the table above.

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

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: https://www.britannica.com/topic/netiquette

Academic Honesty

"All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment." (See Student's Guide Handbook, Policies and Procedures, Conduct). It is the policy of the University, that no form of plagiarism or cheating will be tolerated. Plagiarism is defined as the deliberate use of another's work and claiming it as one's own. This means ideas as well as text or code, whether paraphrased or presented verbatim (word-for-word). Cheating is defined as obtaining unauthorized assistance on any assignment. Proper citation of sources must always be utilized thoroughly and accurately. If you are caught sharing or using other people's work in this class, you will receive a 0 grade and a warning on the first instance. A subsequent instance will result in receiving an F grade for the course, and possible disciplinary proceedings. If you are unclear about what constitutes academic dishonesty, ask.
For more details and the definition of academic dishonesty see the following procedures:

Graduate Academic Dishonesty 13.99.99.R0.10

Special Needs

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
East Texas A&M University
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/

East Texas A&M University Supports Students' Mental Health

The Counseling Center at East Texas A&M University, 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

Nondiscrimination Notice

East Texas A&M University 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 East Texas A&M University 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 East Texas A&M University 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/34SafetyOfEmployees AndStudents/34.06.02.R1.pdf

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