

University of North Texas at Dallas
Fall 2025
SYLLABUS

EMSA 3385: Fire Investigation and Analysis (3 SCH)

Department of	Criminal Justice and Sociology
Instructor Name	Dr. Paul Ayres
Office Location	Online Only
Office Phone	972-338-1504
Email Address	paul.ayres@untdallas.edu
Office Hours	Zoom meetings by appointment
Virtual Office Hours	Zoom meetings by appointment
Course Format/Structure	Online (Canvas LMS)
Classroom Location	Online (Canvas LMS)
Class Meeting Days & Times	Asynchronous; log in as needed to complete coursework
Course Catalog Description	This course examines the technical, investigative, legal, and social aspects of arson, including principles of incendiary fire analysis and detection, environmental and psychological factors of arson, legal considerations, intervention, and mitigation strategies. This course prepares the student to recognize and apply best practices in the investigation of fires, conduct the origin and cause determination procedures and practices necessary to ascertain if the fire was accidental or incendiary, prepare the investigative reports necessary to document such analysis, and apply the findings and knowledge acquired through such efforts to reduce the consequence of both accidental and intentional fires.
Prerequisites	Must be in the Bachelor of Applied Science - Emergency Services Administration program.
Corequisites	None

Required Reading	<p>Technical Committee on Fire Investigator Professional Qualifications. (2021). <i>Standard for professional qualifications for fire investigator</i> (2022 ed.). National Fire Protection Association [NFPA].</p> <p>Available for free at: https://link.nfpa.org/free-access/publications/1033/2022</p> <p>Print ISBN: 978-1455928156</p> <p>Technical Committee on Fire Investigations. (2024). <i>Guide for fire and explosion investigations</i> (2024 ed.). National Fire Protection Association [NFPA].</p> <p>Available for free at: https://link.nfpa.org/free-access/publications/921/2024</p> <p>Print ISBN: 978-1455931255</p> <p>Technical Committee on Fire Investigation Units. (2024). <i>Standard for fire investigation units</i> (2025 ed.). National Fire Protection Association [NFPA].</p> <p>Available for free at: https://link.nfpa.org/free-access/publications/1321/2025</p> <p>Print ISBN: 978-1455931644</p>
Recommended Reading & References	<p>Icove, D. J. & Haynes, G. A. (2018). <i>Kirk's fire investigation</i> (8th ed.). Pearson Education.</p> <p>Lentini, J. J. (2019). <i>Scientific protocols for fire investigation</i> (3rd ed.). CRC Press.</p>
Access to Learning Resources	<p>UNT Dallas Library: Phone: (972) 338-1616; Website URL: http://www.untDallas.edu/library</p> <p>UNT Dallas Bookstore: Phone: (972) 780-3652; Website URL: http://www.untDallas.edu/bookstore Email: untDallas@bkstr.com</p>

<p>Canvas Resources</p> <p>Supported Browsers:</p> <ul style="list-style-type: none"> • Chrome <p>Supported Devices:</p> <ul style="list-style-type: none"> • iPhone • Android • Chromebook <p><i>Note: Tablet users can use the Canvas app</i></p> <p>Screen Readers:</p> <ul style="list-style-type: none"> • VoiceOver (Safari) • JAWS (Internet Explorer) • NVDA (Firefox) <p><i>Note: There is no screen reader support for Canvas in Chrome</i></p>	<p>Getting Help with Canvas:</p> <p>Canvas 24/7 Phone Support for Students: 1-833-668-8634</p> <p>Canvas Help Resources:</p> <p>Canvas Student Guide - https://community.canvaslms.com/docs/DOC-10701</p> <p>For additional assistance, contact UNT Dallas Digital Learning: DAL1, Room 157 Email: DigitalLearning@UNTDallas.edu</p> <p>If you are working with Canvas 24/7 Support to resolve a technical issue, please keep me updated on the troubleshooting progress.</p> <p>If you have a course-related issue (e.g., course content, assignment trouble, quiz difficulties), please contact me during office hours or by email.</p>
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Course Overview

Course Goals/Overview:

This course examines the technical, investigative, legal, and social aspects of arson, including principles of incendiary fire analysis and detection, environmental and psychological factors of arson, legal considerations, intervention, and mitigation strategies. This course prepares the student to recognize and apply best practices in the investigation of fires, conduct the origin and cause determination procedures and practices necessary to ascertain if the fire was accidental or incendiary, prepare the investigative reports necessary to document such analysis, and apply the findings and knowledge acquired through such efforts to reduce the consequence of both accidental and intentional fires.

Learning Objectives/Outcomes:

At the end of this course, the student will be able to:

1. Demonstrate a technical understanding of the characteristics and impacts of fire loss and the crime of arson, which is necessary to conduct competent fire investigation and analysis.
2. Document the fire scene in accordance with best practice and legal requirements.
3. Analyze the fire scenario utilizing the scientific method, fire science and relevant technology.
4. Analyze the legal foundation for conducting a systematic incendiary fire investigation and case preparation.
5. Design and integrate a variety of arson-related intervention and mitigation strategies.

Course Outline

This schedule is subject to change by the instructor. Any changes to this schedule will be communicated by announcement in the Canvas course.

Dates	Topic
Aug 25 – Aug 30	Module 0 Course Information Module 1 Standards & Guides
Aug 31 – Sep 6	Module 2 Legal Considerations & Safety
Sep 7 – Sep 13	Module 3 Methodology
Sep 14 – Sep 20	Module 4 Fire Science & Fire Effects/Patterns
Sep 21 – Sep 27	Module 5 Building Systems & Fire Protection
Sep 28 – Oct 4	Module 6 Electrical & Fuel Gas Systems
Oct 5 – Oct 11	Module 7 Information Sources, Documentation, & Evidence
Oct 12 – Oct 18	Module 8 Origin, Cause, & Responsibility
Oct 19 – Oct 25	Module 9 Failure Analysis & Analytical Tools
Oct 26 – Nov 1	Module 10 Human Behavior & Fatal Fires
Nov 2 – Nov 8	Module 11 Specialized Investigations I (Appliances; Wildfire)
Nov 9 – Nov 15	Module 12 Specialized Investigations II (Vehicle; Marine)
Nov 16 – Nov 22	Module 13 Specialized Investigations III (Explosions)
Nov 23 – Nov 29	Module 14 Planning & Complex Investigations
Nov 30 – Dec 6	Module 15 Administration of FIUs I
Dec 7 – Dec 13	Module 16 Administration of FIUs II

Course Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course. **All assignments must be submitted by 11:59 p.m. on December 13, 2025.**

- Discussions – Students will be expected to participate in Canvas discussions. Students will respond to the question(s) with a well thought out and reasoned answer. Be sure to write on college level when participating in the Canvas forums and reference at the end of each post any sources used in the formulation of your responses.

- CFI Trainer Modules – Students will log into CFI Trainer and complete training modules throughout the course. Certificates from CFI Trainer will be uploaded to Canvas for credit.
- Final Exam – Students will complete a multiple choice exam covering the material discussed during the semester.

Grading Matrix:

Instrument	Percentage of Grade
Discussions	25%
CFI Trainer Modules	25%
Final Exam	50%

Grade Determination:

Letter Grade	Total Percentage
A	90% or better
B	80 – 89%
C	70 – 79%
D	60 – 69%
F	Less than 60%

Need tutoring services or just some help with a particular assignment? For tutoring that empowers students to achieve success, schedule an appointment with the Learning Commons today at <https://www.untDallas.edu/learning/schedule-appointment/>.

Course-Specific Policies

Attendance and Participation Policy:

The University attendance policy is in effect for this course. Please refer to Policy 7.005 Student Attendance at <https://untsystem.policytech.com/dotNet/documents/?docid=1347&public=true>. Class attendance in the Canvas classroom and participation is expected because the class is designed as a shared learning experience, and because essential information not in the textbook will be discussed in the discussion board. Online presence and participation in all class discussions is essential to the integration of course material and your ability to demonstrate proficiency. Attendance for this online or hybrid course is considered when you are logged in and active in Canvas, i.e., posting assignments, taking quizzes, or completing Discussion Boards. To maintain financial aid award eligibility, activity must occur before the census date of the session or term of the course. Refer to UNT Dallas' Registrar for specific dates. If you are absent/not active in the course shell, it is YOUR responsibility to let the instructor know immediately, upon your return, the reason for your absence if it is to be excused.

Assignment Policy:

Assignments should be submitted by 11:59 p.m. on the last day of the assigned week (e.g., assignments in WK01 should be turned in by 11:59 p.m. on the last day of WK01). Late assignments may be accepted for full credit if they are submitted by 11:59 p.m. on the last day of the course. All assignments should follow the current APA style guide and cite sources as necessary.

Exam Policy:

Exams should be taken as scheduled. No makeup examinations will be allowed except for documented emergencies (See Policy 7.005 Student Attendance at <https://www.untDallas.edu/hr/upol>).

University Policies and Procedures**Students with Disabilities (ADA Compliance):**

The University of North Texas at Dallas makes reasonable academic accommodations for students with disabilities. Students seeking accommodation must first register with the Disabilities Services Office (DSO) to verify their eligibility. If a disability is verified, the DSO will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodation at any time, however, DSO notices of accommodation should be provided as early as possible in the semester to avoid any delays in implementation. Note that a student must obtain a new letter of accommodation for every semester and must meet/communicate with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Disability Services Office website at <http://www.untDallas.edu/disability>. You may also contact them by phone at 972-338-1777; by email at UNTDisability@untDallas.edu on the first floor of the Student Center.

Canvas Instructure Accessibility Statement:

University of North Texas at Dallas is committed to ensuring that online and hybrid courses are usable by all students and faculty including those with disabilities. If you encounter any difficulties with technologies, please contact our ITSS Department. To better assist them, you would want to have the operating system, web browser and information on any assistive technology being used. The Canvas Instructure Accessibility Statement is provided at <https://www.canvaslms.com/accessibility>.

NOTE: Additional instructional technology tools, such as Turnitin, Respondus, Panopto, and publisher cartridge content (i.e. MyLab, Pearson, etc.) may NOT be fully ADA compliant.

Please contact our Disability Office should you require additional assistance utilizing any of these tools.

Academic Integrity:

Academic integrity is a hallmark of higher education. You are expected to abide by the University's code of Academic Integrity policy. Any person suspected of academic dishonesty (i.e., cheating or plagiarism) will be handled in accordance with the University's policies and procedures. Refer to the UNT Dallas Academic Integrity Policy in the appropriate Catalog at <http://dallascatalog.unt.edu>.

Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabrication of information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students.

UNT Dallas acknowledges the evolving capabilities of Artificial Intelligence (AI) technologies and their various effects on student writing and content creation. The department and its' programs take a use-with-permission approach to AI. Students are only permitted to use AI technology in the creation of any course content if permitted by the course instructor. If the use of AI technology is detected, without specific instructor permission, the student will be deemed in violation of the plagiarism policy (see Student Code of Conduct).

Web-based Plagiarism Detection: Please be aware in some courses, students may be required to submit written assignments to Turnitin, a web-based plagiarism detection service, or another method. If submitting to Turnitin, please remove your title page and other personal information.

Classroom etiquette:

Students are encouraged to contribute their perspectives and insights to class discussions. However, offensive & inappropriate language (swearing) and remarks offensive to others of nationalities, ethnic groups, sexual preferences, religious groups, genders, or other ascribed statuses will not be tolerated. Disruptions which violate the Code of Student's Rights, Responsibilities, and Conduct will be referred to the Dean of Students as the instructor deems appropriate (UNTD Policy 7.001 found at <https://untsystem.policytech.com/dotNet/documents/?docid=1278&public=true>).

Classroom Disruption:

Students are expected to always engage with the instructor and other students in this class in a respectful and civil manner to promote a classroom environment that is conducive to teaching and learning. Students who engage in disruptive behavior will be directed to leave the classroom. A student who is directed to leave class due to disruptive behavior is not permitted to return to class until the student meets with a representative from the Dean of Students Office. It is the student's responsibility to meet with the Dean of Students before class meets again and to provide the instructor confirmation of the meeting. A student who is directed to leave class will be assigned an unexcused absence for that class period and any other classes the student misses.

because of not meeting with the Dean of Students. The student is responsible for material missed during all absences, and the instructor is not responsible for providing missed material. In addition, the student will be assigned a failing grade for assignments, quizzes or examinations missed and will not be allowed to make up the work.

The Code of Student's Rights, Responsibilities, and Conduct (UNTD Policy 7.001 found at <https://untsystem.policytech.com/dotNet/documents/?docid=1278&public=true>) describes disruption as the obstructing or interfering with university functions or activity, including any behavior that interferes with students, faculty, or staff access to an appropriate educational environment. Examples of disruptive behavior that may result in a student being directed to leave the classroom include but are not limited to: failure to comply with reasonable directive of University officials, action or combination of actions that unreasonably interfere with, hinder, obstruct, or prevents the right of others to freely participate, threatening, assaulting, or causing harm to oneself or to another, uttering any words or performing any acts that cause physical injury, or threaten any individual, or interfere with any individual's rightful actions, and harassment. You are encouraged to read the Code of Student's Rights, Responsibilities, and Conduct for more information related to behaviors that could be considered disruptive.

Course Evaluations:

Student evaluations of teaching effectiveness are a requirement for all organized classes at UNT Dallas. This short survey will be made available to you at the end of the semester via your campus email, providing you a chance to comment on how this class is taught. I (as the instructor) will not have access to the results of the evaluations until after final grades have been posted. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider students' evaluations to be an important part of your participation in this class.

Sexual Harassment, Sexual Misconduct, Intimate Partner Violence and Stalking

UNT Dallas is committed to creating a safe learning environment for all members of our community, free from gender and sex-based discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking, in accordance with Title IX, Texas laws and University Policies. Please note that all employees are mandated reporters and must report all instances of sexual misconduct, dating violence, sexual assault, domestic violence and stalking to the Title IX Coordinator. If you or someone you know has experienced any form of sex or gender-based discrimination or violence and wish to speak to the Title IX Coordinator, you can email them at titleix@untDallas.edu or file a report [here](#).

Pregnancy, Pregnancy Related Conditions and Parenting Modifications Under Title IX

UNT Dallas is committed to compliance with Title IX, and to supporting the academic success of pregnant and parenting students and students with pregnancy related conditions. If you are a pregnant, have pregnant related conditions or a parenting student (child under one-year needs documented medical care) who wishes to request reasonable related modifications from the University under Title IX, please email the Title IX Coordinator at titleix@untDallas.edu. The Title IX Coordinator will work with your professors and academic unit to provide reasonable

modifications needed to be supportive of your education while pregnant or as a parent under Title IX.

Bad Weather Policy:

Campus facilities will close, and operations will be suspended when adverse weather and/or safety hazards exist on the UNTD campus or if travel to the campus is deemed dangerous as the result of ice, sleet or snow. In the event of a campus closure, the Marketing and Communication Department will report closure information to all appropriate major media by 7 a.m. That department will also update the UNTD website, Facebook and Twitter with closing information as soon as it is possible. For more information, please refer to <http://www.untDallas.edu/police/resources/notifications>.

Inclement Weather and Online Classes:

Online classes may or may not be affected by campus closures due to inclement weather. Unless otherwise notified by your instructor via e-mail, online messaging, or online announcement, students should assume that assignments are due as scheduled.

Technology Assistance: To successfully access the materials in Canvas, UNT Dallas advises that your computer be equipped with the minimum system requirements listed on the first page of the syllabus.

If you have trouble accessing or using components of the course, try using Google Chrome browser. If you still experience technical difficulties, first, notify your instructor.

If the problem is still not resolved, either e-mail DigitalLearning@UNTDallas.edu or use the “Help” button in Canvas in the left/global navigation to live chat with support 24/7. Also, no matter what browser you use, always enable pop-ups.

For more information see:

- UNT Dallas Canvas Technical Requirements:
<https://community.canvaslms.com/docs/DOC-10721>
- Canvas Instructure Support & Unsupported Operating Systems:
<https://community.canvaslms.com/docs/DOC-10720>