

SYLLABUS

Course: Fire Investigation and Analysis

COURSE & SECTION: FES 4685

CREDIT HOURS: 3

SESSION: FALL 2021

** ON-LINE

** THERE WILL BE TIMES SCHEDULED FOR ON-LINE MEETINGS.

INSTRUCTOR: *Dr. Chris Reynolds, Ed.D., CEM, CFO, EFO, MEMS*

Office Rinker School of Construction Management

Rinker 303

Chris.Reynolds@ufl.edu

813-309-1948

Bio for Chris Reynolds, Ed.D., CEM, EFO, CFO, MEMS

Dr. Chris Reynolds has extensive civilian and military emergency management and homeland security experience. He retired in 2010 from a large civilian Fire-Rescue department after serving 33 years, rising to the rank of Division Chief and Shift Commander. He also retired in 2014 from the United States Air Force as a Lieutenant Colonel, where he was an Emergency Preparedness Liaison Officer (EPLO) assigned to the Defense Support of Civilian Authorities (DSCA) Command Cell, 1st Air Force (Air Forces Northern), Tyndall Air Force Base, Fla. Air Force EPLOs support the designated combatant commander and lead federal agencies to assist in coordinating military support to local, state and federal agencies involved in domestic incident management. He is a certified emergency manager (CEM) through the International Association of Emergency Managers (IAEM) and has commanded numerous multi-alarm/multi-agency emergency scenes, mass casualty, and hazardous materials emergencies. He was deployed to the Oklahoma City Bombing in 1995, assisting the FEMA Incident Support Team (IST) on site.

In his military role, he deployed to New Orleans in the aftermath of Hurricane Katrina as the officer in command of an aeromedical evacuation liaison team (AELT) that was a part of Joint Task Force (JTF) Katrina and coordinated joint civilian/military airlift of over 20,000 evacuee's and 4,500 casualties. Most recently, Lt. Col. Reynolds was deployed in support of JTF Haitian Earthquake and coordinated the repatriation of Haitian casualties in the South Florida AOR. Lt. Col. Reynolds was among the first mobilized in the aftermath of the September 11th attacks in 2001 and deployed as the commanding officer of an AELT to two classified forward locations in the Afghanistan/Pakistan area. His Team coordinated the medical evacuation of US and coalition combat casualties and directly supported combat search and rescue (CSAR) operations. His Team was recognized by the Department of

Defense and awarded the valor "V" device for their efforts. In 1995, he deployed to Haiti during OPERATION UPHOLD DEMOCRACY and coordinated rotary lift-aeromedical evacuation between Port A' Prince and the USNS Comfort.

OFFICE HOURS: *I am available anytime between 9 AM and 3 PM daily. You can email me any time.*

****COURSE WEBSITE:** <http://lss.at.ufl.edu>

**** COURSE COMMUNICATIONS:** There is a General Discussion tab that can be used, or send me an email through the course email.

REQUIRED TEXT: Forensic Fire Scene Reconstruction, 3rd Edition (2012); Icove/DeHaan/Haynes; Brady Publishing ISBN 0132956209

****ADDITIONAL RESOURCES:** *Use resources on the course site under the Resource tab*

****COURSE 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.

****PREREQUISITE KNOWLEDGE AND SKILLS:** *None*

PURPOSE OF COURSE: This course prepares the student to recognize and apply best practices in the investigation of fires, to conduct the origin and cause determination procedures and practices necessary to ascertain if the fire was accidental or incendiary, to prepare the investigative reports necessary to document such analysis, and to apply the findings and knowledge acquired

through such efforts to reduce the consequence of both accidental and intentional fires.

COURSE GOALS AND/OR OBJECTIVES: *By the end of this course, students will:*

1. *Demonstrate a technical understanding of the characteristics and impacts of fire loss and the crime of arson 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*

**** HOW THIS COURSE RELATES TO THE STUDENT LEARNING OUTCOMES IN THE FIRE EMERGENCY SERVICES PROGRAM:** *Demonstrate strong verbal and written communication skills for leadership in fire and emergency services. Illustrate knowledge and legal application of safety, health and environmental regulations at state and federal levels.*

****TEACHING PHILOSOPHY:** *I am looking for students to demonstrate a working knowledge of the subject. You need to be creative when you complete your assignments but maintain a professional appearance of your work. Your work needs to be complete and in such a manner that someone can pick up your document and understand what you are trying to convey. And most of all your work needs to be supported with research and cited in properly in APA format.*

****INSTRUCTIONAL METHODS:** *The course is designed for individual and group interactivity. It is important to post and respond to discussion questions in the course within the time frame allotted. This provides a learning environment by networking with other students in the course. The assignments are individual base to give you the opportunity to do a variety of activities, in many cases, similar to what you will be doing in role as a leader in the emergency services profession.*

COURSE POLICIES:

ATTENDANCE POLICY: *The course is designed in module format. You should check the site at least once a week. You are required to complete the assignments including discussion questions within the time period designated on the module. There will be meetings set up throughout the course. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at:*

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

****QUIZ/EXAM POLICY:** *There is a final paper for this course. There are no exams or quizzes.*

MAKE-UP POLICY: *You must contact me if you are going to be late on any assignment to receive credit.*

****ASSIGNMENT POLICY:** *All assignments have a due date. Please be sure to check the date and time it is due in each module.*

****LATE ASSIGNMENT & DISCUSSION POLICY:**

Assignments 48 hours late will receive a 10% deduction in their grade.

- * Assignments more than 48 hours but less than 30 days late will receive a 20% deduction in their grade.*
- * Assignments more than 30 days late but submitted during the semester will receive a 50% deduction in their grade.*
- * Discussions more than 48 hours late will receive a 25% deduction in their grade.*
- * Discussions more than 48 hours later will receive a 50% deduction in their grade.*

****COURSE TECHNOLOGY:** *Class meetings will require a web camera and mic/audio. If you are not able to use a web camera you will need to at least provide audio/mic, you can call in on a phone also.*

UF POLICIES:

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES: Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at <http://www.dso.ufl.edu/students.php>.

****NETIQUETTE: COMMUNICATION COURTESY:** All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. [Describe what is expected and what will occur as a result of improper behavior] <http://teach.ufl.edu/docs/NetiquetteGuideforOnlineCourses.pdf>

**** UF'S HONESTY POLICY**

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor of in this class.

Evaluations: "Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or

via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>."

GETTING HELP:

For issues with technical difficulties for E-learning in Sakai, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml>

** Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Other resources are available at <http://www.distance.ufl.edu/getting-help> for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

Should you have any complaints with your experience in this course please visit <http://www.distance.ufl.edu/student-complaints> to submit a complaint.

COURSE SCHEDULE:

<p>Module 1</p> <p>Weeks 1 & 2</p>	<p><u>Required Readings:</u></p> <ul style="list-style-type: none"> • Forensic Fire Scene Reconstruction - p1 through p34 • Forensic Fire Scene Reconstruction - p35 through p49 <p><u>Required Videos:</u></p> <ul style="list-style-type: none"> • How First Responder's Impact The Fire Investigation <p><u>Discussion Forum:</u></p> <ol style="list-style-type: none"> 1. Discuss the 6 steps in Forensic Fire Scene Reconstruction. Which step do you consider the most critical? Explain why. 2. Provide a substantive response to a fellow student colleague. Don't just agree or disagree--provide a substantive response or in support or non-support. <p><i>Your initial post <u>MUST</u> be a minimum of 250 words, with a minimum 150 word reply to a fellow student.</i></p>
<p>Module 2</p> <p>Weeks 3 & 4</p>	<p><u>Required Readings:</u></p> <ul style="list-style-type: none"> • Forensic Fire Scene Reconstruction - p54 through p94 • (Additional Reading) Full Scale Room Burn Pattern Study <p><u>Required Video:</u></p> <p>Burning Questions</p>

	<p><u>Module 2 Assignment Due:</u></p> <p>Prepare a five (5) page paper discussing the impacts fire engineering analysis and an understanding of fire dynamics has had on fire investigation and analysis. In your discussion, be sure to explain why firm foundations in both fire analysis and fire dynamics is so important to the investigator.</p> <p><u>Note:</u></p> <p>All papers must be double-spaced with title page and reference list, following the APA format. Here is a link to the University of Florida Writing Center, which is an excellent resource.</p>
<p>Module 3</p> <p>Weeks 5 & 6</p>	<p><u>Required Readings:</u></p> <ul style="list-style-type: none"> • Forensic Fire Scene Reconstruction - p97 through p132 • Forensic Fire Scene Reconstruction - p132 through p146 • (Additional Reading) Hourglass Burn Patterns-A Scientific Explanation for Their Formation • (Additional Reading) Using Fire Modeling to Understand Fire Behavior <p><u>Discussion Forum:</u></p> <ol style="list-style-type: none"> 1. Discuss why the fire plume is the most important factor in fire scene reconstruction. In your discussion, describe what "patterns" can tell the investigator. 2. Provide a substantive response to a fellow student colleague. Don't just agree or disagree--provide a substantive response or in support or non-support. <p><i>Your initial post <u>MUST</u> be a minimum of 250 words, with a minimum 150 word reply to a fellow student.</i></p>

<p>Module 4</p> <p>Weeks 7 & 8</p>	<p><u>Required Readings:</u></p> <ul style="list-style-type: none"> • Forensic Fire Scene Reconstruction - p151 through p173 • (Additional Reading) Fire Scene Reconstruction • (Additional Reading) Organizing and Completing Fire Scene Examination with Multiple Interested Parties <p><u>Required Videos:</u></p> <ul style="list-style-type: none"> • Expert Witnesses in Arson Cases <p><u>Module 4 Assignment Due:</u></p> <ul style="list-style-type: none"> • Prepare a five (5) page paper discussing the importance of fire scene reconstruction. In your discussion, explain the impact of the scientific method on fire investigations and the benefits afforded to the investigator. <p><u>Note:</u></p> <p>All papers must be double-spaced with title page and reference list, following the APA format. Here is a link to the University of Florida Writing Center (Links to an external site.), which is an excellent resource.</p>
<p>Module 5</p>	<p><u>Required Readings:</u></p> <ul style="list-style-type: none"> • Forensic Fire Scene Reconstruction - p173 through p219 • Forensic Fire Scene Reconstruction - p224 through p260 • (Additional Reading) Fundamentals of Digital Photography for Fire Investigators Final

<p>Weeks 9 & 10</p>	<ul style="list-style-type: none"> • (Additional Reading) The Six Motives of Fire Setting <p><u>Required Video:</u></p> <p>FDNY Bureau of Fire Investigation</p> <p><u>Discussion Forum:</u></p> <ol style="list-style-type: none"> 1. Discuss the six classifications of fire setting. In your discussion, identify which of the six you believe are the most dangerous. 2. Provide a substantive response to a fellow student colleague. Don't just agree or disagree--provide a substantive response or in support or non-support. <p>Your initial post MUST be a minimum of 250 words, with a minimum 150 word reply to a fellow student.</p>
<p>Module 6</p> <p>Weeks 11 & 12</p>	<p><u>Required Readings:</u></p> <ul style="list-style-type: none"> • Forensic Fire Scene Reconstruction - p263 through p305 • (Additional Reading) An Updated International Survey of Computer Models for Fire and Smoke • (Additional Reading) The Fire Modeling Process Power Point <p><u>Module 6 Assignment Due:</u></p> <ol style="list-style-type: none"> 1. Prepare a five (5) page paper discussing the importance of fire modeling in investigations. In your discussion, explain the impact fire modeling has had in fire investigations. <p><u>Note:</u></p>

	<p>All papers must be double-spaced with title page and reference list, following the APA format. Here is a link to the University of Florida Writing Center (Links to an external site.), which is an excellent resource.</p>
<p>Module 7</p> <p>Weeks 13 & 14</p>	<p><u>Required Readings:</u></p> <ul style="list-style-type: none"> • Forensic Fire Scene Reconstruction - p308 through p349 • Forensic Fire Scene Reconstruction - p351 through p387 • (Additional Reading) Recovery and Interpretation of Burned Human Remains <p><u>Required Video:</u></p> <ul style="list-style-type: none"> • Arson Investigation Fires--Know the Cause 1954 Los Angeles Fire Dept Training Film <p><u>Discussion Forum:</u></p> <ol style="list-style-type: none"> 2. After reading the article, "Recovery and Interpretation of Burned Human Remains", discuss your thoughts of the "Fatal Fire Scene Processing Protocols" that begin on page 62 and end on page 80. 3. Provide a substantive response to a fellow student colleague. Don't just agree or disagree--provide a substantive response or in support or non-support. <p><u>Note:</u></p> <p>All papers must be double-spaced with title page and reference list, following the APA format. Here is a link to the University of Florida Writing Center (Links to an external site.), which is an excellent resource</p>

<p>Module 8</p> <p>Week 15</p>	<p>FINAL PAPER DUE!</p> <p>Prepare a five (5) page summary of what you have learned over the last 15 weeks. Be sure to address whether this course will assist you in either becoming a fire investigator or will enhance your duties of a fire investigator.</p> <p><u>Note:</u></p> <p>All papers must be double-spaced with title page and reference list, following the APA format. Here is a link to the University of Florida Writing Center, which is an excellent resource.</p>
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GRADING POLICIES:

The grade is based on a point system. You divide the total number of earned points into the total amount of points available to determine your grade. A grading rubric for the final project is under the Resource Tab on the course.

Assignment	Points or percentage
Forum Discussions – 50 points each discussion	200 points
Three Assignment Papers – 100 points each assignment	300 points
Final Paper - comprehensive and applied	200 points

Total Grade	700 points
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GRADING SCALE

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

A = 93.0 to 100%	C = 73.0 to 76.9
A- = 90.0 to 92.9	C- = 70.0 to 72.9
B+ = 87.0 to 89.9	D+ = 67.0 to 69.9
B = 83.0 to 86.9	D = 63.0 to 66.9
B- = 80.0 to 82.9	D- = 60.0 to 62.9
C+ = 77.0 to 79.9	F = below 60

EVALUATION PROCESS:

Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three Weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu>.

Reynolds (2019)