



FORS 5119
Fire Debris Analysis
Fall Semester 2017

Professor: Jorn (Chi Chung) Yu, PhD, D-ABC

Office: CFS 221F

Telephone: (936) 294-4412

E-mail: jornyu@shsu.edu

Class hours: Monday 9:00-9:50

Classroom: CFS 104

Office hours: Monday, 10:00-11:50, Wednesday 13:00-14:00, Friday 15:00-16:00, or appointment.

Textbooks:

Fire Debris Analysis, Eric Stauffer, Julia Dolan and Reta Newman, Academic Press, 2007.

Course Description:

The purpose of this course is to provide an overview of current forensic practice in fire debris analysis. This overview consists of understanding the history of fire debris analysis, the classification of ignitable liquid, standard method for fire debris sample analysis. Current practice in fire debris sample collection, preparation and the settings of standard instrumentation in a forensic laboratory will be introduced in this course. **Credit Hours:** 1

Learning Objectives:

The purpose of the course is to help students become familiarized with fire debris analysis. Challenges in fire debris sample collection, preservation, analysis and data interpretation will be covered in this course. At the completion of this course, students should be able to:

1. Describe standard procedures for fire debris sample collection.
2. Explain the composition of various ignitable liquids.
3. Assess different ignitable liquid classes and their chemical characteristics.
4. Assess different analytical procedures for fire debris analysis.
5. Recognize the effects of the extraction techniques on the recovery of ignitable liquid residues.
6. Evaluate professional levels of knowledge, skills and abilities that are required in fire debris analysis.

Course Requirements:

No prerequisite is required for this course.

Grading:

Exam 1 and Exam 2	40%
Quizzes	30%
Final Exam	30%

Letter Grade Distribution:

≥ 90.00	A
80.00 - 89.99	B
70.00 - 79.99	C
≤ 69.99	F

Make-up Exams:

There is no make-up exams in this course.

Student Academic Policies:

concerning Attendance, Academic Honesty, Disabled Student and Services for Disabled Students, and Absences on Religious Holy days may be found at: <http://www.shsu.edu/dept/academic-affairs/aps/aps-students.html>

Use of Telephone and Text Messages in Academic Classrooms and Facilities:

<http://www.shsu.edu/dept/academic-affairs/aps/aps-curriculum.html>

Final Exam Schedule:

<http://www.shsu.edu/dept/registrar/calendars/final-exam-schedules.html>

Services for Students with Disabilities (SSD)

SSD Office Location: Lee Drain Annex (next to the Farrington Building)

Telephone: 936-294-3512

TDD: 936-294-3786

E-mail: disability@shsu.edu

Web Address: <http://www.shsu.edu/disability>

Tentative Schedules:

This schedule is subject to change. Changes will be announced in class and updated in the Blackboard system.

Week	Content
Week 1	<ul style="list-style-type: none">• Introduction to the course
	PART I. History and Review of Basic Organic Chemistry
Week 2	<ul style="list-style-type: none">• Labor Day
Week 3	<ul style="list-style-type: none">• Fire Investigation and Fire Debris Analysis• Reading assignment: <i>Ch. 1</i>
Week 4	<ul style="list-style-type: none">• History of Fire Debris Analysis• Reading assignment: <i>Ch. 2</i>. Quiz 1
Week 5	<ul style="list-style-type: none">• Review of Basic Organic Chemistry• Reading assignment: <i>Ch.3</i>. Quiz 2
Week 6	<ul style="list-style-type: none">• Chemistry and Physics of Fire and Liquid Fuels• Reading assignment: <i>Ch. 4</i>. Quiz 3
Week 7	<ul style="list-style-type: none">• Exam 1
	PART II. Fire Debris Sample Collection and Analysis
Week 8	<ul style="list-style-type: none">• Detection of Ignitable Liquid Residues at Fire Scenes• Reading assignment: <i>Ch. 5</i>
Week 9	<ul style="list-style-type: none">• Fire Debris Sample Collection• Reading assignment: <i>Ch. 6</i>. Quiz 4
Week 10	<ul style="list-style-type: none">• Flammable and Combustible Liquids• Reading assignment: <i>Ch. 7</i>. Quiz 5
Week 11	<ul style="list-style-type: none">• Gas Chromatography and Gas Chromatography-Mass Spectrometry• Reading assignment: <i>Ch.8</i>. Quiz 6
Week 12	<ul style="list-style-type: none">• Interpretation of Data Obtained from Neat Ignitable Liquids• Reading assignment: <i>Ch. 9</i>. Quiz 7
Week 13	<ul style="list-style-type: none">• Exam 2
Week 14	<ul style="list-style-type: none">• Extraction of Ignitable Liquid Residues from Fire Debris• Reading assignment: <i>Ch.11</i>
Week 15	<ul style="list-style-type: none">• Interpretation of Data Obtained from Fire Debris Samples• Reading assignment: <i>Ch. 12 and Ch. 13</i>
Week 16	<ul style="list-style-type: none">• Final Exam• All work due