



Basic Course Information

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| Semester: | Fall 2024 | Instructor Name: | Robert Malek |
| Course Title & #: | Fire Behavior and Combustion | Email: | Robert.malek@imperial.edu |
| CRN #: | 10657 | Webpage (optional): | |
| Classroom: | Online | Office #: | 3200 Building |
| Class Dates: | 8/16/2021-12/11/2021 | Office Hours: | M-Thurs 12-1pm By Zoom, Phone Call, Email, or In Person |
| Class Days: | Online | Office Phone #: | 760-355-6152 Office 760-879-9725 Cell Phone |
| Class Times: | Online | Emergency Contact: | Tricia.jones@imperial.edu 760-355-6183 |
| Units: | 3 | Class Format: | Online |

Course Description

This course provides theory and fundamentals of how and why fires start, spread, and are controlled. An in-depth study of fire chemistry and physics, fire characteristics of materials, extinguishing agents, and fire control techniques will be covered. This is one of six CORE courses required for an associate degree in Fire Technology. (C-ID: FIRE 140 X) (CSU)

Course Prerequisite(s) and/or Corequisite(s)

The student must be able to navigate themselves through Canvas and be knowledgeable on the basics of a computer or mobile device (which ever platform being used to take the course. The student is highly recommended to have taken basic math (pre-algebra) and college level English. This is a standalone course and no other fire knowledge is required.

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:
demonstrated by being able to:

1. Define basic terms and concepts related to fire behavior and chemistry. (ILO2)
2. Analyze physical conditions which determine states of matter and influence fire behavior. (ILO2)
3. Demonstrate how to recall physical and chemical properties of fire. (ILO4)

Course Objectives

In addition to putting fires out, fire fighters also need to understand fire behavior in order to manage the fire scene and minimize risks to life and property. The book covered in this course will give us a comprehensive grasp of how fires start and spread, informed decisions on how to best control and extinguish fires cannot be made.



The student will also be able to:

Define basic terms and concepts related to fire behavior and chemistry.

Identify states of matter and describe chemical processes associated with combustion.

Analyze physical conditions which determine states of matter and influence fire behavior.

Describe fire suppression agents and their properties.

Compare and contrast methods and techniques of fire suppression

The objectives in this course align with the Fire and Emergency Services Higher Education (FESHE) Initiatives, as well as FESHE course objectives;

What is FESHE? Working with coordinators of two- and four-year academic fire and emergency medical services (EMS) degree programs, the U. S. Fire Administration's National Fire Academy (NFA) has established the FESHE network of emergency services related education and training providers. The FESHE mission is to: Establish an organization of post-secondary institutions to promote higher education and to enhance the recognition of the fire and emergency services as profession to reduce loss of life and property from fire and other hazards. The initiatives are supported by solutions identified from other industries that could be applied to fire and emergency services

Textbooks & Other Resources or Links

Principles of Fire of Fire Behavior and Combustion Fourth Edition

Richard G. Gann & Raymond Friedman

ISBN 978-0-7637-5717-5

Course Requirements and Instructional Methods

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.

Assignments

Students will complete the following assignment activities. When completing your written assignments in either Microsoft Word or rich text format (using Times New Roman size 12 font ONLY) – not Word Perfect, use APA CITED textbook concepts to analyze the disaster response issues. If you just complete the assignments in broad terms without applying text concepts using APA 3 citations, your grade will be significantly lower. While older sources are fine, students must include



the required number of citations from the textbook and more current sources.

APA Citations: APA citations are required for assignments. Please ensure you're familiar with the process for correctly citing sources in your course submissions.

My goal is assignments will be reviewed and grades posted within 24 hours of their submission. Assignments submitted late will have a 10 % penalty assessed for each week late. Cover, reference, appendix, and table pages DO NOT count towards the page length requirements. There is NO extra credit or makeup assignments offered in the course, so every assignment contributes to students' final course grades.

Assignments MUST be posted to the canvas site and do NOT get course messaged to me. I do not want a "backup" copy sent to me. Use Canvas only – thanks! Research Paper: 100 Points DUE DATE: October 17th Prepare a five-page (double-spaced) describing current activities or changes in operations in fire service agencies from research of trade-technical magazines and analyze their effects on the fire department. This assignment will ensure you become the subject matter expert on this element of the course curriculum.

Mid-term Exam (Chapter 1 - 5): 120 Points October 3rd Complete the multiple choice.

Final Research: 100 Points DUE DATE: Dec 5th Prepare a five-page (double-spaced) paper discussing how fire administration effects personnel and functions of the department? How are relationships of fire department with other agencies? Why are rules and regulations important and how are they applied in the fire service. Please utilize at least five text citations and five citations from other sources (published after Jan. 2010) to support the discussion of the topic. Using headers to break up the various section of this assignment is MANDATORY.

Final Exam (Chapters 1 - 10): 200 Points DUE DATE: Dec 10th Complete the multiple choice final exam Imperial Valley College Course Syllabus – Fire 100 Fire and Emergency Services Orientation and Terminology Prerequisite knowledge: None Instructors Plan for Classroom response time and feedback on assignments: Please note that you will receive a response/feedback within 24 hours after having posted your question in the "Ask the Instructor" Discussion Board. For a faster response please email me at Robert.malek@imperial.edu.

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.

Announcement:

In the announcement section you will my "Welcome/Self-Introduction". All upcoming events will be posted on a weekly basis, or as needed. Please be vigilant and monitor this section.

Prerequisite knowledge:

None

Instructors Plan for Classroom response time and feedback on assignments:

Please note that you will receive a response/feedback within 24 hours after having posted your question in the "Ask the Instructor" Discussion Board. For a faster response please email me at Robert.malek@imperial.edu

Course Grading Based on Course Objectives

Discussion Boards (10pts x 12modules) 120 Points Total: (Points Complete a one paragraph entry. The entry should be an

overview of the main points of the chapter and closely related to the instructions posted on each board. The first Discussion Board includes a self introduction component so that students get to know each other. The final week includes a student analysis of the course. This board is aimed at summarizing what the student took from this course.

Quiz 60 points (12 time 5 points each)

Mid-Term 60 points

Final 60 points

Case Study 60 points

Discussions Max 140 points

Total of 300 points

Grading scale: A = 300 to 290 points; B = 289 to 280 points; C = 279 to 270 points; D = 269 to 260 and F = 259 to 0 points.

Course Policies

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class. It is the student's responsibility to drop or officially withdraw from the class. See [General Catalog](#) for details.
- Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.
- What is netiquette? Netiquette is internet manners, online etiquette, and digital etiquette all rolled into one word. Basically, netiquette is a set of rules for behaving properly online.
- Students are to comply with the following rules of netiquette: (1) identify yourself, (2) include a subject line, (3) avoid sarcasm, (4) respect others' opinions and privacy, (5) acknowledge and return messages promptly, (6) copy with caution, (7) do not spam or junk mail, (8) be concise, (9) use

appropriate language, (10) use appropriate emoticons (emotional icons) to help convey meaning, and (11) use appropriate intensifiers to help convey meaning [do not use ALL CAPS or multiple exclamation marks (!!!!)].

- Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another's work and recognize the important of acknowledging and safeguarding intellectual property.
- There are many different forms of academic dishonesty. The following kinds of honesty violations and their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of unacceptable academic conduct.
- Plagiarism is taking and presenting as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to "cite a source" correctly, you must ask for help.
- Cheating is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question.

Anyone caught cheating or plagiarizing will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the [General Catalog](#) for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to, the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment; (e) using a commercial term paper service.

Other Course Information

A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should me as that of any other student who desires to add a class. See General Catalog for details.

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Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as absences.



IMPERIAL VALLEY COLLEGE

IVC Student Resources

Imperial Valley College offers various services in support of student success. The following are some of the services available for students. Please speak to your instructor about additional services which may be available.

- [CANVAS Support Site](#). The Canvas Support Site provides a variety of support channels available to students 24 hours per day.
- [Learning Services](#). There are several learning labs on campus to assist students through the use of computers and tutors. Please consult your [Campus Map](#) for the [Math Lab](#); [Reading, Writing & Language Labs](#); and the [Study Skills Center](#).
- [Library Services](#). There is more to our library than just books. You have access to tutors in the [Study Skills Center](#), study rooms for small groups, and online access to a wealth of resources.
- Any student with a documented disability who may need educational accommodations should notify the instructor or the [Disabled Student Programs and Services](#) (DSP&S) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313. Please contact them if you feel you need to be evaluated for educational accommodations.

Students have counseling and health services available, provided by the pre-paid Student Health Fee.

- [Student Health Center](#). A Student Health Nurse is available on campus. In addition, Pioneers Memorial Healthcare District provide basic health services for students, such as first aid and care for minor illnesses. Contact the IVC [Student Health Center](#) at 760-355-6128 in Room 1536 for more information.
- [Mental Health Counseling Services](#). Short-term individual, couples, family, and group therapy are provided to currently enrolled students. Contact the IVC [Mental Health Counseling Services](#) at 760-355-6196 in Room 2109 for more information.
- Students have the right to experience a positive learning environment and to due process of law. For more information regarding student rights and responsibilities, please refer to the IVC [General Catalog](#).
- Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. The IVC [Library Department](#) provides numerous [Information Literacy Tutorials](#) to assist students in this endeavor.

Anticipated Class Schedule/Calendar

week 1 Syllabus / Orientation on Canvas (see links on Home 13-19 Page)

Week 2 Fire Measurements One

Week 3 Chemical Elements Two

Week 4 Physical and Chemical Change Three

Week 5 Flow in Fluids Four

Week 6 Heat Transfer Five

Week 7 Combustion, Fire, and Flammability Six

Week 8 October Mid Term Week 1-7

Week 9 Fire Characteristics: Gaseous Combustibles Seven

Week 10 Fire Characteristics: Liquid Combustibles Eight

Week 11 Fire Characteristics: Solid Combustibles Nine

Week 12 Combustion Products Ten

Week 13 Smoke and Heat Hazards Eleven

Week 14]Fire Fighting Chemicals Twelve

Week 15 19-25 Vacation

Week 16 Nov-Dec

Computational Modeling of Fires Fourteen

Week 17 3-8 Finals - Essay

*****Subject to change without prior notice*****