Course Outline

COURSE: JFT 140    DIVISION: 50    ALSO LISTED AS:

TERM EFFECTIVE: Fall 2017    Curriculum Approval Date: 11/28/2016

SHORT TITLE: FIRE BEHAVIOR AND COMBUSTION

LONG TITLE: Fire Behavior and Combustion

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<th>Units</th>
<th>Number of Weeks</th>
<th>Type</th>
<th>Contact Hours/Week</th>
<th>Total Contact Hours</th>
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<td>Lecture: 3</td>
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<td>Lab: 0</td>
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COURSE DESCRIPTION:
This course explores the theories and fundamentals of how and why fires start, spread, and are controlled.

PREREQUISITES:

COREQUISITES:

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES
L - Standard Letter Grade

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:
02 - Lecture and/or discussion

STUDENT LEARNING OUTCOMES:
By the end of this course, a student should:
1. Identify the fundamental theories of fire behavior and combustion.
   Measure of assessment: Written Exam, Class Discussion
   Year assessed, or planned year of assessment: 2017
   Semester: Fall
2. Define the basic terms and concepts associated with the chemistry and dynamics of fire.
   Measure of assessment: Written Exam

12/13/2016
3. Differentiate between the various types of extinguishing agents.

Measure of assessment: Written Exam, Class Discussion

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS

Curriculum Approval Date: 11/28/2016

I. Introduction
A. Matter and Energy
B. The Atom and its Parts
C. Chemical Symbols
D. Molecules
E. Energy and Work
F. Forms of Energy
G. Transformation of Energy
H. Laws of Energy

II. Units of Measurements
A. International (SI) Systems of Measurement
B. English Units of Measurement

III. Chemical Reactions
A. Physical States of Matter
B. Compounds and Mixtures
C. Solutions and Solvents
D. Process of Reactions

IV. Fire and the Physical World
A. Characteristics of Fire
B. Characteristics of Solids
C. Characteristics of Liquids
D. Characteristics of Gases

V. Heat and its Effects
A. Production and Measurement of Heat
B. Different Kinds of Heat

VI. Properties of Solid Materials
A. Common Combustible Solids
B. Plastic and Polymers
C. Combustible Metals
D. Combustible Dust

VII. Common Flammable Liquids and Gases
A. General Properties of Gases
B. The Gas Laws
C. Classification of Gases
D. Compressed Gases

VIII. Fire Behavior
A. Stages of Fire
B. Fire Phenomena
1. Flashover
2. Backdraft
3. Rollover
4. Flameover
C. Fire Plumes
IX. Fire Extinguishment
A. The Combustion Process
B. The Character of Flame
C. Fire Extinguishment
X. Extinguishing Agents
A. Water
B. Foams and Wetting Agents
C. Inert Gas Extinguishing Agents
D. Halogenated Extinguishing Agents
E. Dry Chemical Extinguishing Agents
F. Dry Powder Extinguishing Agents
XI. Hazards by Classification Types
A. Hazards of Explosives
B. Hazards of Compressed and Liquefied Gases
C. Hazards of Flammable and Combustible Liquids
D. Hazards of Flammable Solids
E. Hazards of Oxidizing Agents
F. Hazards of Poisons
G. Hazards of Radioactive Substances
H. Hazards of Corrosives

METHODS OF INSTRUCTION:
Lecture Discussion Audio/Visual Aid

METHODS OF EVALUATION:
Writing assignments
Percent of total grade: 30.00 %
Written Homework Assignments
Objective examinations
Percent of total grade: 70.00 %
Quizzes, Exam

OUT OF CLASS ASSIGNMENTS:
Assignment Description: Written assignment regarding the physical and chemical properties of fire.
Assignment Description: Read Class Text

REPRESENTATIVE TEXTBOOKS:
Required Representative Textbooks
ISBN: 978-1284136111
Reading Level of Text, Grade: 12 Verified by: Doug Achterman

ARTICULATION and CERTIFICATE INFORMATION

12/13/2016
Associate Degree:
CSU GE:
IGETC:
CSU TRANSFER:
    Transferable CSU, effective 2017
UC TRANSFER:
    Not Transferable

SUPPLEMENTAL DATA:
Basic Skills: N
Classification: Y
Noncredit Category: Y
Cooperative Education:
Program Status: 1 Program Applicable
Special Class Status: N
CAN:
    CAN Sequence:
CSU Crosswalk Course Department: JFT
CSU Crosswalk Course Number: 140
Prior to College Level: Y
Non Credit Enhanced Funding: N
Funding Agency Code: Y
In-Service: N
Occupational Course: C
Maximum Hours: 3
Minimum Hours: 3
Course Control Number:
Sports/Physical Education Course: N
Taxonomy of Program: 213300