

## THREE RIVERS COMMUNITY COLLEGE CHEMISTRY FOR EMERGENCY RESPONSE - COURSE SYLLABUS

**COURSE TITLE:** Chemistry for Emergency Response  
**CLASS HRS:** 3  
**INSTRUCTOR:** James Turner (Jim)  
**CONTACT INFO:** (860) 599-9700  
**CLASS DAY & TIME:** Wednesday, 6:00 PM to 8:45 PM  
**REQUIRED TEXT:** Hazardous Materials Chemistry, 2<sup>nd</sup> Edition

**COURSE NO:** FTA 125  
**CREDIT HRS:** 3  
**SEMESTER:** Fall 2007  
**E-MAIL:** jturner@trcc.commnet.edu  
**CLASS ROOM:** Thames Campus, Room 224  
**AUTHOR:** Armando S. Bevelacqua

**COURSE OBJECTIVE:**

Together we'll explore the hazardous materials challenges that fire service professionals face, with a focus on developing an understanding of Chemistry.

**GRADING:**

Score	Grade	GRADING NOTES	
A	96 – 100	<p><b>Academic Honesty</b> - Three Rivers Community College adheres to Academic Honesty in addition to the Student Discipline Policy, sections 2:10 and 3:1-10, as provided by the Board of Trustees of Connecticut Community Colleges. Please review your 2005-2006 College Catalog for details.</p> <p><b>Late Work</b> – I reserve the right to deduct 10% from the possible points that you may receive for an assignment, for each class session that an assignment is late, up to three class sessions. After three class sessions, I will record a zero (0) for that assignment, unless you have made previous arrangements with me and only in exceptional circumstances. All assignments must be submitted by the end of the last class.</p> <p><b>Incompletes</b> – An incomplete is a temporary grade assigned by the faculty member when course work is missing and the student agrees to complete the requirements. The student and instructor both must sign a contract to permit an "incomplete" grade. The contract will denote what must be completed to resolve the "I" grade. The "I" must be resolved by the end of the 10th week of the next academic semester (except summer) or it automatically converts to an "F" or "NC" for incomplete (remedial) courses.</p>	
A-	90 – 95		
B+	87 – 89		
B	83 – 86		
B-	80 – 82		
C+	77 – 79		
C	73 – 76		
C-	70 – 72		
D+	67 – 69		
D	63 – 66		
D-	62 – 60		
F	BELOW 59		
<b>SPECIAL NOTE(S):</b>			<b>ASSIGNMENT WEIGHTING:</b>
No classes on November 14 <sup>th</sup> & 21 <sup>st</sup> Last Class is December 12 <sup>th</sup>			Quizzes: 35% Final: 65%

### WEEKLY OBJECTIVES

Week 1 – August 29 – Course Overview & the Basics

- 1) Week's Objectives
  - a) Course Overview and the basics of chemistry
- 2) Individual Assignment(s)
  - a) Read Chapters 1 & 2, NFA CER Units 1 & 2
  - b) Memorize elements
  - c) Complete activity
  - d) Study for Quiz 1

Week 2 – September 5 – Salts – **Quiz 1**

- 1) Week's Objectives
  - a) Ionic bonding and naming of salts, balancing formulas and the 7 types of salts
- 2) Individual Assignment(s)
  - a) Read Chapter 2, NFA CER Unit 3

Week 3 – September 12 – Salts Continued

- 1) Week's Objectives
  - a) Incident based Salt identification
  - b) Identification of elements and compounds that tend to be water reactive
  - c) Hazards of oxidizers
- 2) Individual Assignment(s)
  - a) Complete activity
  - b) Study for Quiz 2
  - c) Read Chapter 2,, NFA CER Unit 4

Week 4 – September 19 – Inorganic non-salts – **Quiz 2**

- 1) Week's Objectives
  - a) Covalent bonding
  - b) Inorganic non-salt identification.
  - c) Incident based non-salt identification
- 2) Individual Assignment(s)
  - a) Complete activity
  - b) Read Chapter 2, NFA CER Unit 5

Week 5 – September 26 – Introduction to the hydrocarbon family and organic chemistry

- 1) Week's Objective
  - a) Hydrocarbon structure, isomers, bonds and shapes
  - b) Formula based hydrocarbon identification
  - c) IUPAC naming
  - d) Hazard association of alkene, alkyne, alkane, and aromatic hydrocarbons
- 2) Individual Assignment(s)
  - a) Complete activity
  - b) Study for Quiz 3
  - c) Read Chapter 3, NFA CER Unit6

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Week 6 – October 3 – Hydrocarbon derivatives – **Quiz 3**

- 1) Week's Objective
  - a) Identification of specific hydrocarbon derivatives
  - b) Identification of hazards commonly associated with each functional group
- 2) Individual Assignment(s)
  - a) Complete Activity
  - b) Read Chapter 3, NFA CER Unit 6

Week 7 – October 10 – Hydrocarbon derivatives

- 1) Week's Objective
  - a) Identification of specific hydrocarbon derivatives
  - b) Identification of hazards commonly associated with each functional group
- 2) Individual Assignment(s)
  - a) Complete Activity
  - b) Study for Quiz 4
  - c) Read Chapter 4, NFA CER Unit 6

Week 8 – October 17 – Hydrocarbon derivatives – **Quiz 4**

- 1) Week's Objective
  - a) Identification of specific hydrocarbon derivatives
  - b) Identification of hazards commonly associated with each functional group
- 2) Individual Assignment(s)
  - c) Complete Activity
  - d) Read Chapter 5, NFA CER Unit 6

Week 9 – October 24 – Hydrocarbon derivatives

- 1) Week's Objective
  - a) Identification of specific hydrocarbon derivatives
  - b) Identification of hazards commonly associated with each functional group
- 2) Individual Assignment(s)
  - a) Complete Activity
  - b) Study for Quiz 5
  - c) Read Chapter 6, NFA CER Unit 7

Week 10 – October 31 – Chemical and physical properties – **Quiz 5**

- 1) Week's Objective
  - a) Identification of key physical and chemical properties of hazardous materials
  - b) Understanding of the relationship between molecular weight, size, and polarity affect physical effects
- 2) Individual Assignment(s)
  - a) Complete Activity
  - b) Read Chapter 6, NFA CER Unit 7

Week 11 – November 7 – Chemical and physical properties

- 1) Week's Objective
  - a) Identification of key physical and chemical properties of hazardous materials
  - b) Understanding of the relationship between molecular weight, size, and polarity affect physical effects
- 2) Individual Assignment(s)
  - a) Complete Activity
  - b) Read NFA CER Unit 8

**Week 12 – November 14 – No Class**

**Week 13 – November 21 – No Class**

Week 14 – November 28 – Radioactive isotopes and detection – **Quiz 6**

- 1) Week's Objective
  - a) Defining an isotope
  - b) Three common forms of ionizing radiation
  - c) Protection measures
  - d) Detection principles
  - e) Quiz 6 at the end of class
- 2) Individual Assignment(s)
  - a) Complete Activity
  - b) Study for Quiz 7
  - c) Read NFA CER Unit 10

Week 15 – December 5 – Toxicity of Chemical Families – **Quiz 7**

- 1) Week's Objective
  - a) General principles of toxicology
  - b) Factors influencing toxicity
  - c) Quiz 7 at end of class
- 2) Individual Assignment(s)
  - a) Study for Final Exam

Week 16 – December 12 – **Final Exam**