

SYLLABUS  
CHM-102  
CHEMISTRY FOR EMERGENCY RESPONDERS  
Spring 2020



South Portland, Maine 04106

**Fire Science**

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**Title: Chemistry For Emergency Response**

**Catalog Number: Chem 102**

**Credit Hours: 3**

**Total Contact Hours: 45**

**Lecture (or Lab): Lecture  
Lindstedt**

**Assistant Professor Robert**

**Office Hours – Location: Rm 2 Howe Hall**

**Contact Information  
rlindstedt@smcme.edu  
(O) 741-5750**

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**REQUIRED TEXT**

**Text, Tools, and/or Supplies**

Text: Chemistry for Emergency Response, 3<sup>rd</sup> Edition, FEMA (This will be provided for you free of charge).

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**COURSE DESCRIPTION**

Course Description: This survey non-laboratory course is designed to acquaint the student with the broad principles of chemistry as they relate to application and hazards in the fire fighting field. The survey includes basic chemical terminology, structure of matter, atomic bonding, molecular theory of matter, chemical and physical change, and the general states of matter, gases, liquids and solids. Discussion of the more common elements, compounds they form, and the resulting hazards and their uses, completes the course.

**Course Objectives**

After successfully completing the course, the student will be able to:

- Utilize the hazard risk assessment process
- Know, understand and be able to utilize the periodic table of elements
- Describe the parts of an atom and be able to utilize various models to communicate your understanding.
- Identify the types of molecular bonding.

- Differentiate a compound as a salt or non-salt based on name, chemical formula or structure.
- Classify salt and non-salt compounds based on sub-classification and associated hazards.
- Classify pure hydrocarbon and hydrocarbon derivative compounds with associated hazards when given chemical names, formulas or structures.
- Identify chemical and physical properties of hazardous materials and their interrelationship.
- Evaluate compounds based on the chemical and physical properties.
- Research common and historic hazardous materials events in order to explore the application of course content thus becoming a better informed responder

## EXPECTATIONS

Attendance is expected at all assigned classes. Attendance will be recorded and will affect the student's grade. SMCC requires instructors to report the names of students to the registrar's office who stop attending class. For the purpose of this class, students will be reported as no longer attending after three absences from the class. A report of last date of attendance to the registrar's office results in a grade of Administrative Failure (AF) being recorded for the student. For more information, please refer to the SMCC Student Handbook.

Students are expected to notify the instructor, in advance, concerning absences. Students are responsible for all material missed during absences. If you must miss class for some reason, please notify your instructor immediately. Considering the nature of the material presented during this course, missing class time can have significant negative consequences. Absences and late arrivals (late arrivals will be considered ½ of an absence) will reduce a student's final grade earned in this class. **Three absences will be grounds for course failure.** All classroom activities conducted on the date of absence will be given a grade of (0) zero. Any assignments due the day of an absence will be considered as being late. All late assignments will be given no more than 50% of their earned value. All assignments are due in hard copy (typed when applicable) at the beginning of class. Any assignment that is not passed in within five (5) days of its due date will not be accepted for credit. Attendance is expected at all classes unless otherwise noted. Reminder that there is no such thing as an excused absence in college. This course is offered at different times, if you are unable to make your scheduled class please work with your instructor to see if there is a possibility of you attending one of the other sessions.

- Communications is commonly done through e-mail, **it is the student's responsibility to check their college e-mail on a regular basis.**
- Reading of assigned materials prior to class is expected. Quizzes will be given over the assigned reading and associated notes/activities to ensure that students are maintaining the expectations placed on them..
- Note taking is necessary before each class over the scheduled reading. In class notes will be required as well. Notes and handouts should be organized in a binder.
- Respect the classroom, fellow students, faculty

- Active participation and critical thinking is necessary for knowledge sharing and to get the most from practice opportunities.
- No pagers, or cell phones during class time
- No food or tobacco of any kind used in the classroom
- No hats worn during class time

**Human Dignity and Integrity:** All class participants are expected to treat others with respect. Some of the communication in this course will be via e-mail and on-line discussions that lack the benefit of in-person, non-verbal communications, students are cautioned to carefully select the words and phrases that they use, and maintain a professional on-line demeanor at all times.

Students are expected to submit original work unless other sources are clearly credited. Students are expected to equitably share the load in group work. **Cheating will not be tolerated. Student's found cheating may result in penalizing actions up to and including a failing grade following policies in the student code of conduct.** Any group activity will be expressly indicated as such, all other assignments are to be done on an individual basis.

**Early Warning Letters:** Early warning letters will be sent home to students with unsatisfactory performance. Unsatisfactory performance is determined by a combination of grades and attendance.

## **COURSE ASSIGNMENTS**

**All course assignments are expected on the day they are due (At the BEGINNING if class, typed, stapled as appropriate and unless otherwise instructed – anything less than this will be considered to be late, plan accordingly).**

- **Unit quizzes.** There will be a unit quiz given at the completion of (6) units. These “Big” quizzes will be completed without notes.
- **Assigned reading/quizzes.** Students are responsible for keeping up with reading. Please keep in mind that your textbook is a tool, please feel free to use other tools (sources of information) to achieve full understanding of course content. Quizzes over content may be administered periodically. These “small” quizzes will be open note.
- **Special topic assignments (Projects).** Throughout the semester, students will be assigned topical research based on course content. (6) required (3) optional
- **Tests.** Students will complete two closed book exams in class. (One midterm and one final exam.) For sections 01 and 02, the midterm and the final will be given on the scheduled Fridays. Specific dates and times apply. Please make sure you are aware of these dates and times so that it will not become an issue later.
- **Notebook.** Students will be expected to maintain a notebook for the duration of this course. This notebook will be handed in during the midterm and during the final. (your notebook is graded on being neat, complete and organized)
  - **Section 1:** Syllabus, Schedule, blank copy of ICNTG, blank copy of PCNTG, PCNTG rubric.
  - **Section 2:** ICNTG in order by date with class notes

- **Section 3: G-PCNTG** in order by date and chapter with work sheets
  - **Section 4: Quiz section:** In order
  - **Section 5: Writing assignments:** In order, all preceded by their assignment sheet
  - **Section 6: Content Handouts**
- **Class Professionalism.** This is a combination of attendance, preparation and participation.

## **GRADING**

2 Exams, 15% each	= 30%
Unit Quizzes (6) (1/2, 3, 4*, 5, 6, 7*)	= 30%
Projects (6)	=20%
G-PCNTG (quizzes, notes, worksheets)	=10%
Notebook	= 10%

\*Unit quizzes for chapter 4 and 7 have often fallen within the midterm or final (respectively) due to weather events, cancellations and other unforeseen issues.

## **MCCS NONDISCRIMINATION STATEMENT**

Southern Maine Community College is an equal opportunity/affirmative action institution and employer. For more information, please call 207-741-5798. If you have a disabling condition and wish to request accommodations in order to have reasonable access to the programs and services offered by SMCC, you must register with the disability services coordinator, Sandra Lynham, who can be reached at 741-5629 (TTD 207-741-5667). Further information about services for students with disabilities and the accommodation process is available upon request at this number.