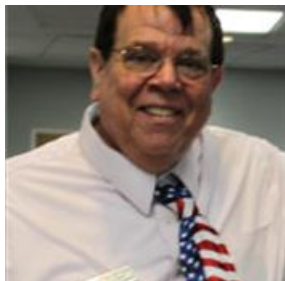


CHM1025C

INTRO GEN CHEMISTRY (105708-1-2178-1-3-1-1)

PROFESSOR INFORMATION



Taylor, John T

Office Hours:

Days	Hours	Campus	Room	Phone
Monday, Wednesday	10:30-11:00 a.m.	NORTH	D-270 office	(904) 677-6763
Monday, Wednesday	02:00-03:15 p.m.	NORTH	D270 office	(904) 677-6763
Monday	05:00-06:00 p.m.	NORTH	D270 office	(904) 677-6763
Monday	08:00-08:30 p.m.	NORTH	D270 office	(904) 677-6763
Tuesday, Thursday	10:00-10:30 a.m.	NORTH	D-270 office	(904) 677-6763
Tuesday, Thursday	02:00-03:00 p.m.	NORTH	D-270 office	(904) 677-6763
Friday	08:00-10:00 a.m.	OCDISTANCE	Online	(904) 614-0531 Cell

And by Appointment

COURSE DESCRIPTION

This course is an introduction to the concepts of inorganic chemistry including structures of matter, atomic theory, nomenclature, bonding, gases, solutions, equilibrium, and acids and bases. This course is for students who have had no previous chemistry and plan to major in science, engineering, pre-medicine or pharmacy.

COURSE INFORMATION

Course Number / Title: CHM1025C / INTRO GEN CHEMISTRY

Number of Credit Hours: 4

Term / Year / Session / Length: Fall / 2017 / A / 15

IMPORTANT DATES

Class Begins	2017-08-28
100% Refund Deadline	2017-09-05 7:00 PM (ET)
Withdraw with 'W' Deadline	2017-11-02 7:00 PM (ET)
Class Ends	2017-12-09

College Holiday(s)

09/04/2017, 11/10/2017, 11/22/2017 @ 5:00 PM - 11/26/2017

These dates are critical for this course. Additional critical dates for this course can be found by clicking the appropriate term links in the [online calendar](#) at the Florida State College at Jacksonville Website.

COURSE LOCATION

Component	Location	Room	Dates	Days	Times
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LAB			8/28/2017 - 12/9/2017		
LEC	NORTH	D0203	8/28/2017 - 12/9/2017	Thursday	10:30 AM - 12:20 PM
LEC	NORTH	D0209	8/28/2017 - 12/9/2017	Tuesday	10:30 AM - 12:20 PM

INSTRUCTIONAL MATERIALS AND EQUIPMENT

Science Lab Notebook required by 2nd week; Lab Coats & Goggles by 2nd week

Lab Experiments via weekly handouts-data pages must be entered in Science Lab Notebook

Corwin's 8th Edition Textbook via bookstore is e-text with access code to Mastering Chemistry Access) or a student may purchase/rent a used copy (without Mastering Code) from any other source,

Access to *Mastering Chemistry* is required for some chapters, but available for extra credit for other chapters not covered in the course.

Textbook:

Pearson is trying something different with the 8/E of Corwin (and some other books) this semester. The feedback that Pierson has been getting from students and schools is that students like digital only, or to rent a book. So, Pierson is selling digital only in the bookstore and if they want a hard copy, they can rent from Chegg.

Mastering Chemistry with Pearson e-text for Introductory Chemistry concepts & Critical thinking

Charles Corwin 8th edition

ISBN: 1323748881

Required: REQUIRED

Course Materials-Lab Notebook

Author: Hayden

Title: Student Lab Notebook (Chemistry Spiral Bound)

Publisher: Hayden-McNeil Publishing

ISBN: 9781930882232

Required: REQUIRED ~\$15

Optional Purchase Loose-leaf Hard Copy Corwin 8th ~\$35

In addition, Pierson is now offering the students an ala carte (loose-leaf) printed version for \$35! It can be purchased directly from the Pearson Store:

<http://www.mypearsonstore.com/bookstore/product.asp?isbn=0134552296>

REQUIRED TEXT / MATERIALS

Textbook:

Pearson is trying something different with the 8/E of Corwin (and some other books) this semester. The feedback that Pierson has been getting from students and schools is that students like digital only, or to rent a book. So, Pierson is selling digital only in the bookstore and if they want a hard copy, they can rent from Chegg.

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<http://www.mypearsonstore.com/bookstore/product.asp?isbn=0134552296>

ACCESSIBILITY

Florida State College at Jacksonville recognizes the importance of assisting and encouraging all students to reach their full potential. In accordance with the Americans with Disabilities Act (ADA), the Americans with Disabilities Act as amended in 2008, and Section 504 of the Rehabilitation Act of 1973, the College ensures that its admission requirements are uniformly applied, and that its services, activities, facilities and academic programs are accessible to and usable by all qualified students. The Office of Services for Students with Disabilities (OSSD) implements and coordinates reasonable accommodations and disability-related services to promote full participation of individuals with disabilities in all aspects of life.

The Rehabilitation Act defines a disability as an individual who has a physical, mental, or learning disability, which substantially limits one or more major life activity (i.e., seeing, hearing, speaking, walking, sitting, standing, breathing, reading, writing, or performing mathematical calculations, and caring for oneself); or who has a record of such impairment; or who is regarded as having such impairment. Both the impairment and the limitation of a major life activity must be established to be eligible under the ADA.

Please click [here](#) for more information.

LEARNING OUTCOMES

SECTION 5 (To be completed for General Education courses only.)

GENERAL EDUCATION LEARNING OUTCOME AREA (Place an "X" in the box next to those that are applicable.)

	Communication	X	Critical Thinking		Information Literacy
X	Scientific and Quantitative Reasoning				Global Sociocultural Responsibility

SECTION 6

LEARNING OUTCOMES	TYPE OF OUTCOME (General Education, Course or Program)	METHOD OF ASSESSMENT
Explain and apply major concepts in general chemistry.	Course	Written tests, reports and/or use of equipment to demonstrate student competency in field.
Demonstrate knowledge of scientific method.	Program	Formulate problem, make observations, derive and test hypothesis, and make conclusions.
Communicate scientific ideas through oral or written assignments.	Program	Students use analytical reasoning skills to solve problems on written tests and/or assignments.
Interpret scientific models such as formulas, graphs, tables and schematics, draw inferences from them and recognize their limitations.	Program	Written reports of projects and/or written tests demonstrate student competency in the application of scientific knowledge.
Demonstrate problem solving methods in situations that are encountered outside of the classroom.	General Education	Students use demonstrations, group discussions, written tests, and/or research projects to illustrate competence in recognizing and evaluating various scientific processes.

COURSE PARTICIPATION

CALENDAR OF ACTIVITIES

Weekly Exams will be administered on Tuesday Mornings 10:30-11:00 before lecture or Thursday Mornings 10:30-11:00 before lab every week except the week of the final December 4

Module 1 (i & ii) (Chapters: 1 & 3) week 2 & 3

Module 2 (i & ii) (Chapters: Chapter 1 (PSS) & 2) Week 3 & 4

Module 3 (i & ii) (Chapters: 4 & 5) Week 5

Module 4 (i & ii) (Chapters 12 (Sections 12.1-12.5) & 6) Week 6 & 7

Module 5i (Chapter 7) Week 8

Module 5ii (Chapter 8) Week 9

Module 5iii (Chapter 8) Week 9

Module 6 (Chapter 10) Week 11

Module 8 (Chapters 11, 13, 14, 17) Week 12 & 13

Module 4iii (Chapter 12 Section 12.6-12.10) Week 14

Module 16 (Chapter 19) Week 14

Final Exam Week 15

Labs are scheduled every Thursday from 10:30 to 12:30 pm:

Experiment #0: Scientific Method Film Project

Experiment #0A: Controlled Experiment Video Analysis

Experiment #1: Introduction/Safety Lab

- a. [HMIS Safety Codes Handout](#)
- b. [NFPA Safety Code Handout](#)
- c. [MSDS Laboratory Chemical Assignment](#)
- d. [Laboratory Equipment & Glassware](#)
- e. FSCJ Chemistry Lab safety Rules

Experiment #2 Measurement Directions

[Experiment #2 Measurement Data Sheet](#)

Experiment #2A: Gasoline Project

Experiment #3 Density & Measurement

[Experiment #3 Density Data Sheet](#)

Experiment #3A: Specific Heat of Unknown Metal

Experiment #4 Recording & Graphing Data

Experiment #4 Recording & Graphing Data Report Sheets

Experiment #4A: Critical Thinking Temperature Scale Graphing Project

Experiment #5: Chemical & Physical Properties

Experiment #5: Chemical & Physical Properties Data Table

Experiment #5A: Spectroscopy: Electron Energy Levels

Experiment #5A: Spectroscopy: Data Table

Experiment #5B: Online Electron Configuration Lab

Experiment #6: Dot Structure of Molecules Directions

Experiment #6: Dot Structure of Molecules Data Report

Experiment #6: Handout Paper Atoms (Dots and/or Dot-Sticks)

Experiment #6A: Online Inorganic Names & Formulas Lab

Experiment #7: Determining a Mole Ratio: Hydrate Analysis Lab

Experiment #7: Determining a Mole Ratio Data Table

Experiment #7A: "What is a Mole?" Online Electronic Search Lab Data Table

Experiment #7B: Bean Jar Experiment

Experiment #8: Chemical Reactions Lab

Experiment #8: Chemical Reactions Data Table

Experiment #9: Hydrate Analysis Lab

Experiment #9: Hydrate Analysis Lab Data Table

Experiment #10 Analysis of a Alka Seltzer Tablet

Experiment #10 Analysis of Alka-Seltzer Data Table

Experiment #11: Generating Hydrogen Gas

Experiment #11: Generating Hydrogen Gas Data Table

Experiment #12: Molecular Models

Experiment #12: Molecular Models Data Table

Experiment #13: Isomer Number Problems Using Molecular Models

Experiment #13: Isomer Number Problems Data Table

Week	Topic	Assignment	Due Dates
One	Gasoline Demand Project	See Handout-Gasoline Demand Project Select vehicle (s) for Project Fill tank during first two weeks, record data; fill tank during last two weeks	Weeks 15 or 16, no later than Thursday May 4

One	The Scientific Method	<p>The Scientific Method Controlled Experiment Paper:</p> <p>Movie Film: Andromeda Strain – 1971</p> <p>The best-selling novel by Michael Crichton was faithfully adapted for this taut 1971 thriller (by 1971 standards-boring today), about a team of scientists racing against time to destroy a deadly alien virus that threatens to wipe out life on Earth. As usual with any Crichton-based movie, the emphasis is on an exciting clash between nature and science, beginning when virologists discover the outer-space virus.....It's all very fascinating if you're interested in scientific method and technological advances (that did not exist in 1970—but is quite common or obsolete today), although the film is obviously very dated in many of its details.....</p> <p><i>Background from Chapter 1(Corwin text):</i></p> <p>1. On pages 4-5 of the Corwin textbook there are listed three steps in the scientific method.</p> <p>Scientific Method Steps vis Corwin:</p> <ol style="list-style-type: none"> 1. An Initial Step of the Scientific Method is to recognize or observe a phenomenon or a problem.) 2. Then the First Step of the Scientific Method is to perform a planned experiment, make observations, and record data. 3. The Second Step in the Scientific Method is to analyze the data and propose a tentative hypothesis to explain the experimental observations. 4. The Third Step in the Scientific Method is to conduct additional experiments to test the hypothesis. If the evidence supports the initial proposal, the hypothesis may become a scientific theory. <p>You may access the article: "A Scientific Mystery-Solving Strategy" on the Internet (http://www.dharma-haven.org/science/myth-of-scientific-method.htm) which includes four steps in solving a scientific mystery: Question, Hypothesis, Testing, and Evaluation. You may access it if you do need more information than the textbook.</p> <p>2. Depending on the text the Scientific Method shows more than three steps. One text lists seven steps which begins with:</p> <p>A. Observation of an odd, unusual, or interesting event...</p> <p>Scientists use these steps to investigate problems and find solutions.</p> <p>The Project: The Hollywood Film Assignment:</p> <p>Your assignment is to watch the film partially during class time, then at home, or at an additional on campus time. Note the problem which threatened life on earth, and set off a "wildfire" protocol. Note how did the scientists approach the "Wildfire" problem and note all the steps and procedures used in the experimental controls that help eliminate the various variables from their investigation, then explain how they went about trying to solve the problem to come up with a solution. Finally you need to explain the solution, and the chemistry behind it, which is discussed in Chapter 14 of the Corwin text.</p>	March 29
		<p>Joint Critical Thinking Project via Modeling Linear Functions Using Temperature Conversion Scales</p>	

Abstract: At FSCJ exercises are being developed to demonstrate critical thinking ability of the students. This project is a joint effort to compare students in both College Algebra and Chemistry classes. The functional relationship between the Fahrenheit and Celsius Temperature scales are derived using the corresponding boiling and freezing points of water. In this project students each create a unique Temperature scale using the student's body weight and the student's age as the boiling and freezing points of water respectively. This "student" scale is then compared to the Fahrenheit and Celsius scales. The resulting functions are graphed and compared. We will illustrate this on the webpage: <http://www.lsua.info/mathworkshop1/frametemp2.html>

Complete Description: At FSCJ exercises are being developed to demonstrate critical thinking ability of the students in all of the general education classes. Cognitive scientists define "critical thinking" as mental activity associated with these types of thinking: a. applying reasoning; b. making decisions; c. problem solving. This critical thinking project is a joint effort to compare students in both College Algebra and Chemistry classes.

During the first weeks of a beginning or first semester of college chemistry classes temperature scales are introduced as part of measurement (Module 2ii-Chapter 2 Corwin text). America still lives with the out dated Fahrenheit scale while most of the world uses the Celsius scale developed as the centigrade scale in the metric system of measurement. Most textbooks demonstrate a graphic comparing three thermometers: Fahrenheit, Celsius, and Kelvin. Then conversion formulas are shown to calculate the corresponding temperature on one thermometer from a temperature on another thermometer.

During the first weeks in a College Algebra Class linear equations are introduced. Graphing linear data, the students sees the $y=mx+b$ relationship. At an AMA summer math workshop at Duke University, the participants were developing discovering learning projects to introduce college algebra topics. The first project had a bank sign flashing current temperatures, Fahrenheit and Celsius. Five data points were given for the temperatures at five different times of day. Graphing the data the student discovers that converting one temperature to another is a linear function: $F = 1.8C + 32$ or $C=0.556(F-32)$. It was pointed out by the presenters that every science student from the fifth or sixth grades and above has seen the conversion formulas in one form or another.

One of the best web sites discussing temperature conversions is: <http://www.mathsisfun.com/temperature-conversion.html>

In addition to the standard textbook formulas, this site has several alternative formulas, one using the +40/-40 process which is by far the best formula for non-mathematical students to use because the conversion from F to C and C to F uses the same order of operation: Add, multiple, then subtract.

The functional relationship between the Fahrenheit and Celsius Temperature scales are derived using the corresponding boiling and freezing points of water. However, to make the college algebra project more interesting, the presenters developed a web site so that the each student creates a unique Temperature scale using the student's body weight and the student's age as the boiling and freezing points of water respectively. This "student" scale is then compared to the Fahrenheit and Celsius scales. The resulting functions are graphed and compared. Each student's linear equation is a unique formula to convert Student to Fahrenheit and Student to Celsius.

If you Google "temperature conversions" you find about 68 millions web pages. However, the unique webpage developed by the presenters which generates the data points is: <http://www.fscj.me/mathworkshop1/frametemp2.html>

The actual project handout follows on the next several pages:

**(CHM 1025C or CHM 2045C)/MAC 1105:
Critical Thinking Exercise**

By definition:

Learning - the acquisition of knowledge or skill.

Teaching – the action of a person who is showing or helping a person to learn.

Cognitive scientists define **“critical thinking”** as mental activity associated with these types of thinking:

- a. applying reasoning
- b. making decisions
- c. problem solving

In the CHM 1025C Corwin textbook used at Florida State College @ Jacksonville, **critical thinking** is introduced within the context of chemical principles. In CHM 1025C and the Corwin text **critical thinking** is undertaken specifically in the **chapter vignette** and **end-of-chapter self-tests**, and generally in **unit analysis problem solving**.

At FSCJ we have been addressing **“Institutional Effectiveness”(I.E)** across the curriculum. The faculty is developing district wide exercises to **assess learning outcomes**. For chemistry (CHM 1025C) the science council/cluster feels we need to pursue under our course goals and objectives the following outcomes:

FSCJ CHM 1025C/CHM 2045C Official Learning Outcomes:

1. Explain and apply major concepts in general chemistry
2. **Demonstrate knowledge of scientific method**
3. **Interpret scientific models such as formulas, graphs, tables and schematics, draw inferences from them and recognize their limitations.**
4. Demonstrate problem solving methods in situations that are encountered outside of the classroom

The following exercise addresses all four of the above, especially #3:

Assignment:

Read section 2.9: Temperature

Three-Four

Critical Thinking Project via Modeling Linear Functions Using Temperature

The above images demonstrate equivalent temperatures on the Fahrenheit and Celsius scales with ice water and boiling water. The third thermometer compares to Kelvin Temperatures to Fahrenheit and Celsius temperatures.

March or before Spring Break

Go to the temperature conversion web site:

<http://www.lsua.info/mathworkshop1/frame-temp2.html>

1. Setup the *Student's theoretical temperature scale* with the following parameters:
2. The **Freezing Point** of water is **Your Age** or **Your Desired Age**. (*Prof Taylor 50° T*)(*Ms Sweet 30° S*)
3. The **Boiling Point** of water is your **body weight** or **desired body weight** (*Prof Taylor 250° T*)(*Sweet 120° S*)
4. Fill in the table below/next page with your parameters to make °X (Student): (Professor Taylor's normal body temperature is the normal 98.6 °F, Professor Bessman 96.8 °F, and Professor Sweet 97.3 °F.
5. If your normal body temperature is not 98.6 then fill in your Fahrenheit temperature and calculate the blanks across the line of the table.)) at least 5 data points from +250°F to -150°F

Table of Equivalent Temperatures:

Temperature °F	Temp. °C	Temp. K	Temp. °T	Temp. °S	Temp. °X
(Fahrenheit)	(Celsius)	(Kevin)	(Taylor)	(Sweet)	(Student)
250	121	394	298	139.0	
212	100	373	250	120.0	
158	70	343	190	93.0	
104	40	313	130	66.0	

98.6	37.0	310.0	124.0	63.3	
97.3	36.3	309.3	122.6	62.7	
96.8	36.0	309.0	122	62.4	
81	27	300	104	54.5	
77	25	298	100	52.5	
75	24	297	98	51.5	
68	20	293	90	48.0	
50	10	283	70	39.0	
32	0	273	50	30.0	
14	-10	263	10	21.0	
0	-18	255	1	14.0	
-4	-20	253	-2	12.0	
-22	-30	243	-14	3.0	
-28	-33.3	240	-17	0.0	
-40	-40	233	-26	-6.0	
-58	-50	223	-33	-15.0	
-76	-60	213	-50	-24.0	
-130	-90	183	-86	-51.0	
-148	-100	173	-98	-60.0	

- Using a rectangular piece of graph paper, set up a graph plotting Fahrenheit versus Celsius so that vertical axis is Fahrenheit ranging from 250 down to -150 and the horizontal axis is -100 on the left and 125 on the

- right.
- Describe the line or curve generated by this data:
 - If the plot is a line, then what is the slope of the line and the Y intercept and the X intercept.
 - Write the equation for the line. (Do you remember the equation of a straight line from algebra?)
 - If the plot is a curve, can you write the equation of the curve?
- Now plot Celsius versus Kelvin on a rectangular coordinate graph. If Kelvin is the y axis and Celsius is the x axis,
 - what is the y axis intercept? What is the slope of the line?
 - Is there an easier way to find the slope of the line by looking at the data?
 - At what temperature Celsius would kelvin equal zero?

In the Corwin textbook on page 50-53 we refer to temperature on the Fahrenheit and Celsius scales as **degree F (°F)** and **degree C (°C)**, but in kelvin temperature, temperatures are referred as **kelvin units? . Why?**

8. Now plot Celsius versus Student and Fahrenheit versus Student using separate graphs. On the °C vs °F graph, examining the data do you notice that: **-40 °F = -40 °C**. On your two Student graph plots is there a temperature where **°S = °C or °S = °F?**

9. Algebraically is there away to determine if there is a temperature on the Taylor Scale, the Sweet Scale, or the Student Scale when that temperature equals a temperature on either the Celsius or Fahrenheit scale?

FINAL GRADE BASED ON TOTAL EARNED POINTS

The class is based on Total Points, approximately 340 give or take +/- (10 to 20). Take the Total Possible and A will be 88% ; B will be 76%; and C will be 65%

7/10. Fahrenheit, Celsius, Taylor, and Sweet temperatures are listed in degrees, while Kelvin and also Rankin temperatures are given in straight units not degrees. Why does Rankin not have the degree sign °?

Grade	Total Points
A	88% of 340 Total Points = 300-340
B	76% of 300 Total Points = 260-299
C	65% of 300 Total Points = 200-259
D	50% of 340 Total Points = 150-199
F	Below 150 Total Points

COURSE GRADE BREAKDOWN

CHM1025C Tentative Grading Sheet Fall 2017

ON-Line Grade Calculator: <http://www.fccj.us/chm1025/25grdcal.html>

Exam Outline: North Campus (Corwin 8th)

Module One: Matter and States of Matter (Chapters 1 & 3)

- A. [Matter Chart](#)- Section 3.2 p69 [Fig 3.2](#) [Answers](#)
- A1. [Matter Chart Applications](#) Section 3.2 p68-69 See Practice/Concept Exercises [Answers](#)
- B. [Element-Symbol](#)- Section 3.3 p72 [Table 3.3](#) [Answers](#) [Fig 3.4](#) [Tabl 3.2](#)
- B1. [Mixer](#) (Click on Element for Answer)
- C. [Element Classification](#)- Section 3.4 p74 [Fig 3.5](#) [Answer](#)
- C1. [Compounds and Chemical Formulas](#) Section 3.5 [Answers](#)

_____ Partial Module 1 Total (First Exam)

- D1. [Chemical and Physical Properties](#) Section 3.6 [Answers](#)
- D. [Chemical/Physical/Nuclear Change](#) Sec 3.7 [Answers](#) [Fig 3.1](#) [Fig 3.6](#) [Fig 3.11](#) [Fig 3.12](#)
- E. [Forms of Energy](#) Sec 3.9/10 p90 [Answers](#) [Fig 3.13](#) [Fig 3.14](#) [Fig 3.15](#) [Fig 3.16](#)
- E1. [Energy Transformations](#) Section 3.10 p89-90 See Practice/Concept Exercise [Answers](#)
- F. [Phase Diagram](#) (From Lecture) Sect 3.1 p65 [Answers](#)
- F1. [Phase Diagram Applications](#)

_____ Partial Module 1 Total (Second Exam)

- M. [Online Multiple Choice](#) Exam (Matter) Chap 1&3

M-1 Suggested & Required Homework:

- B1. [Online/Flash Cards Element Homework](#)
- [M-1 Hardcopy Homework/Study Packet](#) (Submit on Exam#2 Day)
- [M-1 Multiple Choice \(MC\)](#) (Blackboard Online)
- K. [Key Terms](#) Chap 1 p 9, Chap 3 p93 [Answer](#) ck [Online Practice Voc](#)
- H. [Scientific Method](#) Sec 1.1 p3 [Fig 1.3](#) (Project)
- S1. [Mastering Chemistry-Chapter 1](#)
- S3. [Mastering Chemistry-Chapter 3](#)

Module Two: ChemMath and Measurement (Chapters PSS & 2)

- A. [Significant Figures](#)- Section PSS.2 [Answers](#)
- B. [Round Off/Math of Significant Figures](#)- Section PSS.2, pss.3, pss.4, pss.5 [Answers](#)
- C. [Scientific Notation](#) Section PSS.6 [Answers](#)
- D. [Metric Basic](#) Units /Numerical Prefixes- Section 2.1 Table 2.1 [2.2](#) [Answers](#)
- E. [Metric System](#) Conversion Factors- Section 2.2-2.3 [Answers](#)

_____ Partial Module 2 Total (Third Exam)

- F. [Unit Analysis](#) Sections 2.3, 2.4, 2.5 [Answers](#) [Pretest #2](#) [Ans2](#) [Online Site](#)
- G. [Temperature Conversion](#) Section 2.9 [Answers](#)
- H. [Density](#)/Specific Gravity/Volume Calculations Section 2.6-2.7-2.8 [Answers](#) **hi**
- I. [Specific Heat](#) Calculation/Ice Cube Problem Section 2.10 [Answers](#) **hi**

_____ Partial Module 2 Total (Fourth Exam)

- M. [Online Multiple Choice](#) Exam (Measurement) Chapter PSS & 2

M-2 Suggested & Required Homework:

- _____ [M-2 Hardcopy Homework/Study Packet](#)
- _____ M-2 Multiple Choice (MC) (Blackboard Online)
- K. _____ Key Terms Chapters PSS p25 & Chap 2 p60
- G1. _____ [Critical Thinking Project](#) (Submit just after Spring Break)
- _____ [Gasoline Project](#) (Submit last week of class) [Sample Table](#)
- SPSS. _____ Mastering Chemistry-Chapter PSS
- S2. _____ Mastering Chemistry-Chapter 2

Module Three Part I: Atomic Theory & The Periodic Chart (Chapter 4, 5)

- A. _____ [Atomic Notation](#)-Section 4.4 [Answers](#)
- B. _____ [Electron Configuration](#)-Sections 4.9, 4.10 [Answers](#)
- C. _____ [Orbitals / Subshells](#) of the Periodic Table-Section 5.6 [Answer](#)
- C1. _____ [Spectroscopic Notation](#) from Periodic Chart Section 5.6 [Answer](#)
- _____ **Partial Module 3 Total (Fifth Exam)**
- D. _____ [Electron Dot Structures](#)-Section 5.8 [Answers](#)
- E. _____ [e⁻¹ Configuration of Ions](#)-Section 5.10 [Answers](#)
- F. _____ [Periodic Ionic Character](#)-Section 5.10 [Answers](#)
- P. _____ [Periodic Chart Identifications](#) – Chapter 5 [Answer](#)
- _____ **Partial Module 3 Total (Sixth Exam)**
- M. _____ (100) [Multiple Choice Exam](#) [Lecture] & Chapter 4, 5

M-3 Suggested & Required Homework:

- _____ M-3 Hardcopy Homework/Study Packet
- _____ M-3 Multiple Choice (MC) (Blackboard Online)
- K. _____ [Key Terms](#) Chap 4 p126, Chap 5 p155 (Blackboard Online)
- S4. _____ Mastering Chemistry-Chapter 4
- S5. _____ Mastering Chemistry-Chapter 5

Module Four Part I: [Answers](#) Language of Chemistry/Chemical Bonds(Chapter 12, 6)

- D. _____ [Binary Ionic Compounds](#)-Section 6.2, 6.5 [Answers](#)
- E. _____ [Polyatomic Ions](#)-Section – section 6.3, 6.6 [Answers](#) e
- F. _____ [Ternary Ionic Compounds](#)-Section 6.3, 6.6 [Answers](#) f
- _____ **Partial Module 4 Total (Seventh Exam)**

Module Four Part II: [Answers](#) Language of Chemistry/Chemical Bonds(Chapter 12, 6)

- A. _____ [Bond Recognition](#)/Compound Classification-Sections 6.1, 12.1-12.3 [Answers](#) ac
- B. _____ [Dot Structures of Molecules](#)-Section 12.4, 12.5 [Answers](#)
- C. _____ [Binary Molecular](#)(Covalent) Compounds-Section 6.5 [Answers](#) ac
- G. _____ [Binary Acids/ Ternary](#) Oxyacids-Section 6.9,6.10 [Answers](#) g

H. _____ [Inorganic Compounds](#) 6.2-6.10 [Answers](#) h

_____ **Partial Module 4 Total (Eighth Exam)** [M-4 Assignment Outline](#)

M. _____ [Multiple Choice Exam](#) Chapter 12, 6

M-4 Suggested & Required Homework:

_____ M-4 Hardcopy Homework/Study Packet

_____ M-4 Online Multiple Choice (MC) (Blackboard Online)

_____ [Online Names/Formulas Homework](#) (Submit separate Goldenrod form on Exam#2 Day)

_____ Polyatomic Ions Flash Card or Progressive Polyatomic ion online Homework

_____ Corwin Polyatomic Ion Quiz

_____ [Polyatomic Ions Progressive Test \(Best Score of three attempts\)](#) [Required List](#)

K. _____ [Key Terms](#) Chap 6 p185-186, Chap 12 p376-7 (Blackboard Online)

_____ **Hard Copy Dot Structure Homework/Lab:**

S6. _____ [Mastering Chemistry-Chapter 6](#)

S12. _____ [Mastering Chemistry-Chapter 12](#)

Module Five Part I: Chemical Equations & Stoichiometry (Chap 7)

E. _____ [Writing Reactions/ Symbols-Section 7.2](#) [Answers](#)

E1. _____ [Classifying Chemical Reactions-](#) Section 7.4 [Answers](#)

F. _____ [Balancing Chemical Equations](#) -Sections 7.2-7.3 [Answers](#) ef

G. _____ [Predicting Single Replacement Products](#) . Sections 7.7-7.8 [Answers](#)

H. _____ [Predict Double Replacement](#) Sections 7.9, 7.10 [Answers](#) h

H1 _____ [Neutralization/Gas Forming Reactions](#) Section 7.11 Lecture [Answers](#)

_____ **Total (Ninth Exam)**

M. _____ [Multiple Choice Exam](#) (MC) (Blackboard Online)

M-5i Suggested & Required Homework:

_____ M-5i Hardcopy Homework/Study Packet

_____ M-5i Multiple Choice (MC) (Blackboard Online)

K. _____ [Key Terms](#) Chap 7 p219, (Blackboard Online)

S7. _____ [Mastering Chemistry-Chapter 7](#)

Module Five Part II: Chemical Equations & Stoichiometry (Chap 8)

A. _____ [Molecular Mass](#) Calculation-Section 8.3 [Answers](#) a

B. _____ [Mole Calculations](#) I-Sections 8.2 [Answers](#) bcd

B1. _____ [Mole Calculations](#) II-Sections 8.4 [Answers](#) bcd

C. _____ [Percentage Composition](#) Calculation-Section 8.7 [Answers](#) bcd

D. _____ [Empirical Formula Calc.](#) from % Comp-Section 8.8 [Answers](#) bcd

D1. _____ [Empirical Formula Calc.](#) from Lab Data-Section 8.8 [Answers](#) bcd

_____ **Total (Tenth Exam)**

M. _____ Online [Multiple Choice](#) Chapter 8 (Blackboard)

M-5ii Suggested & Required Homework:

- _____ M-5ii Pretest Hardcopy Homework Packet
_____ M-5ii Multiple Choice (MC) (Blackboard Online)

- S8. _____ Mastering Chemistry-Chapter 8
K. _____ [Key Terms](#) Chap 8 p249, (Blackboard O

Module 5 Part III: Chemical Equations & Stoichiometry (Chap 9)

- I. _____ [Mole-Mole Problems](#) Sect 9.2 [Answers](#) ij
J. _____ [Mass-Mass Stoichiometric Problems](#)- Sect 9.4 [Answers](#) ij
K. _____ [Excess/Limiting Reagent Problems](#)- Sect 9.7/9.8 [Answers](#) kl
L. _____ [Impure Reagents/ % Yield](#)- Sect 9.10 [Answers](#) kl

- _____ Total (Eleventh Exam)
M. _____ Online [Multiple Choice](#) Chapter 9 (Blackboard)

M-5iii Suggested & Required Homework:

- _____ M-5ii Hardcopy Homework/Study Packet
_____ M-5ii Multiple Choice (MC) (Blackboard Online)

- S9. _____ Mastering Chemistry-Chapter 9
K1. _____ [Key Terms](#) Chap 9 p279, (Blackboard Online)

Module Six: The Gaseous State (Chapter 10)

- A1. _____ [Properties of Solids](#) (11.4), Liquids(11.1), and Gases 10.1 [Answers](#)
A. _____ [Kinetic Molecular Theory](#)-Section 10.10 page299 [Answers](#) a
B. _____ [Discussion Real vs Ideal Gas Equation](#)-Sect 10.10 [Answer](#) bc
C. _____ [Standard Conditions/Molar Volume](#)-Sect 8.5, 10.2, 10.3 [Answer](#) bc
D. _____ [Gas Laws/Vocabulary](#)-Sections 10.4, 10.5, 10.6, 10.7, 10.8, 10.9 [Answers](#)
E. _____ [Gas Law Problems](#)- Sections 10.4, 10.5, 10.6, 10.7, 10.8, 10.9, 10.10 [Answers](#)
F. _____ [Volume-Volume Stoichiometry](#) Problem-Section 9.6 [Answers](#) fg
G. _____ [Mass-Volume Stoichiometry](#) Problem-Section 9.5 [Answers](#) fg
H. _____ [Density \(STP & Other Conditions\)](#) Section 8.5/10.10 [Answers](#)

- _____ Total (Twelfth Exam)
M. _____ [Multiple Choice Exam](#) [Chapter 10](#)

M-6 Suggested & Required Homework:

- _____ M-6 Hardcopy Homework/Study Packet
_____ M-6 Multiple Choice (MC) (Blackboard Online)

- K. _____ [Key Terms](#) Chap 10 p313-314 (Blackboard Online)
S10. _____ Mastering Chemistry-Chapter 10

Module Eight: Solutions/Oxidation & Reduction (Chapter 12, 13, 14 & 17)

- A. _____ [Solution Properties](#)-From Lecture [Answers](#)

- B. [Factors Affecting Rate of Dissolving](#)-Sec 13.1, 13.2, 13.5, 13.6 & From Lecture [Answers](#)
- C. [Writing Ionization Reactions acids/salts](#) Sect 14.10, 14.11+ lecture [Answers](#)
- D. [Solution Preparation Problems](#)-Section 13.8, 13.9 [Answers](#)
- E. [Solution Dilution Problems](#)-Section Sect 13.10 [Answers](#)
- F. [Solution Reaction Problems](#)-Section 13.11 [Answers](#)

_____ **Partial Module 8 Total (Thirteenth Exam)**

- G. [Rewrite Equations](#) Ionically –Section 14.11 [Answers](#)
- H. [Redox](#) Equations-Sections-Section 17.2—17.4 [Answers](#)
- L. [pH calculations](#)-Section 14.8, 14.9 [Answers](#)

_____ **Partial Module 8 Total (Fourteenth Exam) Chapter 13,14,17**

- M. _____ Multiple Choice **Exam**-Solutions/Redox Chap 13,14,17

M-8 Suggested & Required Homework:

- _____ M-8 Hardcopy Homework/Study Packet (buff)
- _____ M-8 Online Multiple Choice (MC) (Blackboard Online)
- K1. [Key Terms](#) Chap 13 p404, Chap 14 p441, Chap 17 p526 (Blackboard Online)
- G2. _____ Hard Copy (Acid Media) [Writing Net Ionic Reactions Homework](#) (Sect 14.11)
- H1. _____ **Hardcopy REDOX Homework PreLab Required) (10 equations 8A-7B)**
- H2. _____ REDOX 12 rounds in Lab
- H3. _____ **Hardcopy REDOX Homework Post Lab Required) (10 equations 8A-7B)**
- S13. _____ Mastering Chemistry-Chapter 13
- S14. _____ Mastering Chemistry-Chapter 14
- S17. _____ Mastering Chemistry-Chapter 17

M-8 Extra Credit:

- G3. _____ Hard Copy (Basic Media) [Writing Net Ionic Reactions Homework](#) (Sect 14.11)
- H2. _____ **Hardcopy Redox Homework Post Lab Optional) (12 equations 5A-5B-2N)**
- H3. _____ **Hardcopy Redox Homework Post Lab Optional) (Bonus Challenge)**

Acid Media Basic Media Bonus Challenge

Module Four Part II: Chemical Bonding & Molecular Structure (Chapters 12)

- L. [Bond Angles/Bond Lengths](#)-Section 12.10 [Answers](#)
- N. [Geometry of Molecules](#)-Section 12.10 [Answers](#)
- O. [Polarity of Molecules](#)-Section 12.6 [Answers](#)

_____ **Total (Fourteenth Exam) Chapter 12**

- MII. _____ **Multiple Choice Exam**-Chapters 12-fghi

M-4iii Suggest & Required Homework:

- _____ M-4iii Hardcopy Homework/Study Packet
- _____ M-4iii Multiple Choice (MC) Sect 14.6-14.10 (Blackboard Online)

Optional Module 15: Nuclear Chemistry (chapter 18)

A: _____ Balancing Nuclear Reactions Section 18.1-18.2

B: _____ Types of Nuclear Reactions Section 18.1-18.2

C: _____ Half Life Calculation Section 18.4

D: _____ Decay Series Section 18.3

E: _____ Discussion Question Chapter 18

_____ **Total Chapter 18**

S18. _____ **Mastering Chemistry-Chapter 18**

K. _____ [Key Terms](#) Chap 18 p549-550 (**Blackboard Online**)

Module 16 Chapter 19: Introduction to Organic Chemistry

A. _____ [Alkane Series](#) Section 19.2 p552 Table 19.1 p 552 [Answers](#)

B. _____ [Alkyl Radicals](#) Section 19.2 p554-5 Table 19.2 p 555 [Answers](#)

C. _____ [Structural Isomer](#) Problem Section 19.2 553-555

D. _____ [Recognition of 1^o, 2^o, 3^o, 4^o](#) carbons & 1^o, 2^o, 3^o hydrogen (Lecture) [Answers](#)

E. _____ [Nomenclature of Alkanes](#) and Cycloalkanes Section 19.2-9 p555-574 [Answers](#)

F. _____ [Functional Group Recognition](#) Section 19.5 Fig19.3-4 p563 [Answers](#)

_____ **Total Chapter 19**

M. _____ Online Multiple Choice **Exam MC Chapter 19**

M-16 Suggested & Required Homework:

Take-Home Part C [Structural Isomer Number Problems](#)

_____ Structural Isomer Take-Home [Problem #1 C₆H₁₄](#) (makeup-See #7)

_____ Structural Isomer Take-Home [Problem #2 C₇H₁₆](#) (makeup C₈H₁₈)

_____ Structural Isomer Take-Home [Problem #3 C₅H₁₁Br](#) (makeup C₆H₁₃Br)

_____ Structural Isomer Take-Home [Problem #4 C₄H₈Br₂](#) (makeup C₅H₁₀Br₂)

_____ Structural Isomer Take-Home [Problem #5 C₆H₁₂](#) Cycloalkanes only (makeup C₇H₁₄)

_____ Structural Isomer Take-Home [Problem #6 C₆H₁₂](#) Alkenes only (makeup C₇H₁₄)

_____ Makeup Structural Isomer Take-Home [Problem C₄H₁₀O](#) Alcohols & Ethers

_____ **Total Isomer # Activity Chapter 19**

_____ M-16 **Hardcopy** Homework/Study Packet

_____ M-16 **Multiple Choice (MC)** (**Blackboard Online**)

K. _____ [Key Terms](#) Chap 19 p581 (**Blackboard Online**)

19. _____ **Mastering Chemistry-Chapter 19**

Optional Modules

Module Nine: Chemical Kinetics - Chapter 16

Possible

A. Rate Law applied to Collision Model (lecture & 16.1)	00
B. Factors forming the rate Constant-Section 16.1 plus lecture	00
C. Free Radical Mechanism-Halogenation of an Alkane (lecture)	00

S16. _____ Mastering Chemistry-Chapter 16

Module Ten: Chemical Equilibrium - Chapter 16	Possible
A. Equilibrium Constant Derivation from Reaction Rates Section 16.3	00
B. Writing Equilibrium Constant Expressions Section 16.4	00

Module Eleven: Acid/Base Equilibria Chapter 14	Possible
A. Identification of Bronsted-Lowry acids&bases Section 14.3	00
B. Writing Equilibrium Constant Expressions Section 14.7; 16.6	00

S11. _____ Mastering Chemistry-Chapter 11

S15. _____ Mastering Chemistry-Chapter 15

S20. _____ Mastering Chemistry-Chapter 20

Final Exam:

final-Online (100 questions) _____ (TBA)

Final Exam-In Class (100 questions) _____ (TBA)

ACS Toledo or California Placement Test _____ (60 or 46)

Explorations 1st Class:

Dave Ellis (Meet my Frined Dave 13th) authored a leading selling book which is used in Student Success Programs:
"How to Become A Master Student (15th)"

The web site has a lot of self discovery exercises as follows:

[Online Exercise Menu](#)

5a: [First Email 5 points](#)

5b: [Interactive Time Chart 5 points](#)

5e: [Myers-Briggs Type 5 points](#)

5f: [Brain Hemisphere 5 points](#)

5h: [Learning Style Exercise \(not available\) 3 points](#)

[Learning Cycle \(not available\) 3 points](#)

[Learning Grid \(not available\) 3 points](#)

Threaded Discussions

[Who Am I ? 5 points](#)

[Scientific Method Analysis of Video 20 points](#)

FN GRADE - FAILURE FOR NON-ATTENDANCE

A Failure for Non-Attendance (FN) grade indicates that a student has failed a course due to non-attendance. It is calculated as an "F" in the student's grade point average. **For students receiving financial aid, failure for non-attendance may require the student to refund to the College all or part of his or her aid.** The FN grade will be assigned by the faculty member at any time following the final withdrawal date for the course. See the College's page on [Grading policies](http://fscj.edu/grading) (<http://fscj.edu/grading>) for more information.

Drop for Non-Attendance deadline is September 8th. Students must have attended at least one of the four scheduled periods or make prior arrangements with the instructor for being absent the first two weeks..

I GRADE - INCOMPLETE

COURSE GUIDELINES & POLICIES

ACADEMIC DISHONESTY

Academic dishonesty, in any form, has severe consequences. Click [here](#) to view FSCJ's academic dishonesty definitions and procedures.

LATE / MAKE UP WORK

ATTENDANCE

EACH LECTURE CLASS ATTENDED IS WORTH 2 POINTS. STUDENTS SIGNING IN AFTER 11:00 AM OR LEAVING AFTER 12 NOON BEFORE THE OFFICIAL END OF THE CLASS PERIOD WILL EARN ONLY 1 POINT.

EACH LAB ATTENDED IS WORTH 2 POINTS. SIGNING IN AFTER 11:00 AM WILL RECEIVE ONLY ONE POINTS. WHEN STUDENTS HAVE COMPLETED COLLECTING DATA FOR THE ASSIGNED LAB, THEY MAY LEAVE WHEN THEY ARE FINISHED. STUDENTS ARRIVING LATE FOR THE WEEKLY TEST WILL HAVE TO REMAIN AFTER CLASS TO TAKE THE TEST OR RECEIVED A ZERO.

MAKE UP WORK:

THERE IS NO MAKEUP FOR A MISSED LAB. STUDENTS ABSENT FOR A LAB RECEIVE ZERO POINTS FOR THAT LAB. STUDENTS MAY COMPLETE PROJECT/ASSIGNMENTS REQUIRING AT LEAST TWO HOURS TO MAKE UP FOR THE 20 POINTS PER LAB MISSED.

Students missing a test day, will take the test after class the following class period (12:30-1:00) or receive a zero.

Once a test has been graded and returned no make up for that test will be allowed.

If a test has not been returned graded at the end of the next assigned test day, all students completing the test during the next scheduled test period will be given a grade of 100%

EXPECTED STUDENT CONDUCT:

<http://www.fscj.me/ExpectationsStudentConduct.htm>

NETIQUETTE:

<http://www.fscj.me/netiquette.htm>

EXPECTATIONS OF STUDENT CONDUCT