I. CHM 1045 General Chemistry I, Co-requisites CHM 1045L General Chemistry I Laboratory and MAC 1104. This course applies to the A.A. degree in the General Education Requirements Area III as a Natural Science.

II. Number of Credit Hours (3), Number of Contact Hours (45 Lecture). Three hours of Lecture per 15-week term.

III. Instructor/Office Number/Telephone Extension: Dr. Bruce Gragg
Room D-108
296-9081 Ext. 212

Office hours; MW 2 - 3 p.m.
e-mail address: bruce.gragg@online.fkcc.edu

IV. COURSE DESCRIPTION: The lecture portion of each class consists of approximately 75 minutes of lecture addressing topics from the required textbook. Atomic structure and molecular structure are studied, as well as the relation between mass and moles. The periodic properties of the elements, chemical reactions and chemical bonding are mastered and their relation to the three macro physical states of matter; gas, liquid, and solid.


V. College-level Competencies

Florida Keys Community College graduates who complete the core curriculum possess the knowledge, skills and values associated with college-educated individuals. Our graduates demonstrate mastery of competencies integrated within the academic disciplines, such as the ability to effectively communicate, seek creative solutions to problems, exhibit cultural awareness, and command basic technological skills.

1. Communication: Comprehend and articulate effectively – written and oral communication

2. Critical thinking: Demonstrate mastery of problem-solving skills in the discipline

3. Diversity: Interpret and evaluate societal and ethical issues, problems and values

4. Technology: Utilize technology effectively
VI. Course Calendar

1. The Course Calendar lists the learning activities and assessment measures that comprise this course on a Modular basis. These activities and assessments are directly related to learning outcomes that support the overall course objectives. There are a total of 400 points that can be achieved during this 15-week course. Students are able to gauge their performance according to this grading scale throughout the duration of the course. The “Student Assessment” column lists all of the assignments required by this course and their due dates. I strongly recommend you print this out and refer to it often.

2. Students are responsible for following the course calendar. Consult your calendar before you start a new chapter or section. (Note: Some sections may not be covered in the same order as in the text). If you ever have a question that begins with “When is ___”, the answer is probably already published in this Course Calendar. Looking here first will probably get you a quick answer to your question.

<table>
<thead>
<tr>
<th>Competency</th>
<th>Module/Week</th>
<th>Learning Outcomes</th>
<th>Learning Activities</th>
<th>Student Assessments</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2,4</td>
<td>Module 1</td>
<td>Objective: Obtain all course materials and read Chapter 1. Study the SI system of weights and measures, significant figures, and the Temperature scales.</td>
<td>1. Students will be able to convert from the USA system into the SI system. 2. Significant figures will allow you to report data with the appropriate degree of accuracy. 3. The relationship among the different temperature scales will be clear.</td>
<td>1. Read the Chapter carefully and take good lecture notes during each class. 2. Work recommended exercises in the lecture portion of the text and work questions 17, 25, 27, 29, 31, 35, 37, 51, 53, 61, and 65.</td>
<td>1. Attendance and class participation. 2. Work all homework problems and assist in their solution in class.</td>
</tr>
<tr>
<td>1,2,4</td>
<td>Module 2</td>
<td>Objective: Chapter 2 – Atoms, Molecules, and Ions. Learn the historical development of the modern theory of the atom. Study the nomenclature of compounds both ionic and covalent.</td>
<td>1. Understand the nature of the atom. 2. Be able to write formulas using cations and anions. Be able to translate formulas into names of compounds.</td>
<td>1. Read the Chapter carefully and take good lecture notes on a daily basis. 2. Work recommended exercises in the lecture portion of the text and work questions 27, 33, 35, 37, 39, 41, 45, 47, 49, and 55.</td>
<td>1. Attendance and class participation. 2. Work all homework problems and assist in their solution in class.</td>
</tr>
<tr>
<td></td>
<td>Module 3</td>
<td>1. capable of writing a balanced chemical</td>
<td>1. Read the Chapter carefully and take good lecture notes on a daily basis.</td>
<td>1. Attendance and class participation.</td>
<td>6.67</td>
</tr>
<tr>
<td>Module</td>
<td>Objective</td>
<td>Due Date</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>----------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Study Chapter 3 – Stoichiometry, particularly: the concepts of a “mole”, molar mass, percent composition of a molecule, empirical and molecular formula determination, and balancing chemical equations by inspection.</td>
<td>No later than the end of week 6.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Master the topics in Chapter 4 – Types of Chemical Reactions and Solution Stoichiometry, paying particular attention to reaction types and solubilities of compounds</td>
<td>No later than the end of week 8.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Complete Chapter 5 – Gases</td>
<td>No later than the end of week 9.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Module</td>
<td>Objective: Complete Chapter 6 - Thermochemistry</td>
<td>distinguish between endothermic and exothermic reactions using standard heats of formation.</td>
<td>and take good lecture notes on a daily basis. 2. Work recommended exercises in the lecture portion of the text and work questions; 17, 19, 33, 35, 43, 65, and 71.</td>
<td>and class participation. 2. Work all homework problems and assist in their solution in class.</td>
<td>Due Date: No later than the end of week 10. 3. Exam III</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>1,2,4</td>
<td>Module 7</td>
<td>1. Students can apply Maxwell’s equation to determine the wavelength and/or frequency of “light”. 2. Students will know how Planck, Einstein, de Broglie, Maxwell, and others contributed to our understand of electro-magnetic radiation.</td>
<td>1. Read the Chapter carefully and take good lecture notes on a daily basis. 2. Work recommended exercises in the lecture portion of the text and work questions; 31, 33, 39, 41, 43, 57, 59, 63, 67, 71, 85, and 89.</td>
<td>1. Attendance and class participation. 2. Work all homework problems and assist in their solution in class.</td>
<td>Due Date: No later than the end of week 12.</td>
</tr>
<tr>
<td>1,2,4</td>
<td>Module</td>
<td>1. Know the types of chemical bonds and the concepts surrounding their development. 2. Students will be aware of the concepts of electronegativity, electronconfiguration, Lewis dot structures, and the VSEPR model.</td>
<td>1. Read the Chapter carefully and take good lecture notes on a daily basis. 2. Work recommended exercises in the lecture portion of the text and work questions; 23, 25, 29, 35, 39, 67, 71, 81, 85, 91, 93, and 99.</td>
<td>1. Attendance and class participation. 2. Work all homework problems and assist in their solution in class.</td>
<td>Due Date: No later than the end of week 15. 3. Exam IV</td>
</tr>
</tbody>
</table>

VII. SPECIFIC COURSE OBJECTIVES: Upon successful completion of the course, the
student will
a. have a sense of the historical development of the science of chemistry.
b. be able to write the formulae of salts and complete and balance chemical reactions.
c. understand the different ways scientists describe the concentrations of solutions and their use in reaction chemistry.
d. be knowledgeable of the periodic table of the elements and the law of periodicity and apply this knowledge to the reaction chemistry of the elements.

VIII. COURSE METHOD: A lecture approach will be used to develop the level of knowledge needed to proceed to the next level of study in the field of chemistry.

IX. METHOD OF STUDENT EVALUATION: There will be four major exams of equal weight contributing 100% points each and class participation and assessment tools accounting for 100 additional points to give a course total of 500% points possible. Letter grades will be assigned according to the following levels of performance: A (100-90%), B (89-80%), C (79-70%), D (69-60%) and a grade of F below 59%.

To qualify to take a missed exam the student must notify the instructor before the scheduled test time that he/she will not be able to take the exam as scheduled and arrange for a make-up exam within 5 working days of the date the exam was originally scheduled. This responsibility is entirely the student's. There will be no exceptions excepted for excused absences.

X. Class Policies

- TELEPHONE: 305-296-9081 ex. 212

Policy for Class Attendance and Make-up of Assignments: The student is entirely responsible for informing the instructor of record for the course if he/she cannot take a scheduled exam and immediately arrange for a make-up time.
Withdrawal Policy

1. Students may withdraw without academic penalty from any course by the established deadline published in the College’s calendar. This will result in a grade of 'W' for the course and will not count against the student's GPA.

2. Students will be permitted a maximum of two withdrawals per course. Upon the third attempt, the student WILL NOT be permitted to withdraw in accordance with State of Florida regulations and will receive an earned grade for that course.

3. It is the responsibility of the student wishing to withdraw from the course to do so by the date published in the College Academic Calendar.

4. Students who abandon the course or do not withdraw themselves by the published deadline are subject to receiving a grade of F.

Exams and Quizzes

1. I recommend the following general process for studying each chapter:
   a. Read each chapter once to get an idea of its contents.
   b. Read the chapter carefully, ensuring you understand each concept.

Extra Credit Work

1. In general, I do not permit students to complete extra credit assignments to improve their grade. To earn the grade you desire, work hard all semester.

How Much Study Time You Should Expect To Devote To This Course

1. Most educators recommend that students spend 1-2 hours outside of class studying and completing assignments for every hour spent in class. For a typical 3 credit hour class, this translates into a total of 6-9 hours every week per course. This is a guideline. Some classes will require more time and effort than this guideline and some will require less, and the time any individual student will need to spend will vary. You should expect that the study time you will need in any class will be toward the high side of the guideline until at least after the first exam or quiz. Then you can compare the effort you expended with the results you earned and make any adjustments necessary.

2. This class covers a lot of material, and like most physical science courses there are some concepts that may be difficult to grasp. Experience has shown that students who are successful in this class generally have study time totals on the higher end of the scale.

Academic Honesty & Plagiarism
1. Students are expected to respect and uphold the standards of honesty in submitting written work to instructors. Though occurring in many forms, plagiarism in essence involves the presentation of another person’s work as if it were the work of the presenter. Any cheating or plagiarism will result in disciplinary action to be determined by the instructor based on the severity and nature of the offense. It is the student’s responsibility to review the College’s policy on Academic Honesty with it.

2. Collaboration and discussion is encouraged in all course aspects other than actually completing the assigned work (quizzes, exams, homework, projects, etc). Indeed, collaboration often leads to increased understanding of the material being covered. If you have questions about an assignment, I encourage you to speak up and ask questions about it.

3. It should, but will not, go without saying that plagiarism is a form of fraud and will not be tolerated. You are expected to do your own work. Copying text or images from any source and claiming it as your own is considered plagiarism. Submitting copied text as most or all of your answer on a homework or project is also a form of dishonesty, even if you cite the source. I want to read YOUR words, not someone else’s words. Using quoted text to support your answer will not usually be necessary in this class.

4. If I catch you in any form of academic dishonesty, you will receive a grade of zero for that assignment. If I catch you a second time, you will earn a failing grade for this class and be reported to the College.

Attendance Policy

1. I will monitor student attendance and participation in educational activities on a weekly basis. Simply logging into the online classroom without submitting any of the assignments due is not sufficient to count for attendance purposes.

Delays in Getting The Textbook

Having regular access to the textbook is a requirement for this class. Whenever possible students should have the text in hand before the first day of class each semester, but there will be times that students are unable to get the text until after the class begins. If you are in this situation, follow the guidelines below. These guidelines are intended to be general enough to apply to all classes you take, and they may not all apply to this class. Not having the text is not an acceptable excuse for doing no work at all in this class.

1. Look at the publisher’s web site for the text. Most publisher text sites have student resources that can help you, and many of these are available even if you do not have the text. As a minimum, the web sites usually have a Table of Contents, which can also help you get an idea what topics we will cover.
2. Please let me know if you don’t have the text by the end of the first week of class. I will not be sympathetic if you wait until after the first week of the semester to tell me you don’t have the text.

Special Needs

If you have any special needs or requirements pertaining to this course, please discuss them with the instructor early in the term. If you have special needs as addressed by the Americans with Disabilities Act (ADA) and need assistance, please notify the Office for Students with Disabilities at 305-809-3504 via email at: dinkel_j@popmail.firn.edu or the course instructor immediately. Reasonable efforts will be made to accommodate your special needs.

Community Decorum

A positive learning experience depends upon respect among all members of this classroom community. Disregard or disrespect for the process, the group or toward any individual will result in removal from the class and may result in you being dropped from the course. Respectful discourse in discussion and email areas is expected and anonymous posting will not be tolerated.

Sexual Predators

Federal and State law requires a person designated as a “sexual predator or offender” to register with the Florida Department of Law Enforcement (FDLE). The FDLE then is required to notify the local law enforcement agency where the registrant resides, attends or is employed by an institution of higher learning. Information regarding sexual predators or offenders attending or employed by an institution of higher learning may be obtained from the local law enforcement agency with jurisdiction for the particular campus, by calling the FDLE hotline (1-888-FL-PREDATOR) or (1-888-357-7332), or by visiting the FDLE website at www.fdle.state.fl.us/sexual_predators. If there are questions or concerns regarding personal safety, please contact the Campus Security Officer on your campus.

Conflict Resolution

Conflict Resolution – Should you have a personal or technical problem or grievance with the course or the instructor, follow this procedure:
1. Make a clear statement verbally or in writing to your instructor about the situation. Your instructor will respond.

2. If your instructor’s response does not resolve the situation, forward your initial statement and your instructor’s response to the Instructor’s Supervisor.

X. COURSE OUTLINE AND CLASS ASSIGNMENTS: Rely heavily on the lecture sessions to highlight the material considered to be the most important for course content. Generally, the student will be responsible for reading one chapter per week and being prepared to ask questions over any material that remains unclear after the lecture session. A selection of recommended problems will be highlighted for the students to work on independently and then addressed in class.

Revise August 2011