CAMPBELLSVILLE UNIVERSITY

COURSE SYLLABUS

PLEASE TYPE. DATE 21 December 2016

ACADEMIC UNIT Natural Science Division FACULTY Elizabeth K. Sutton

Discipline	Course # Section	Title of Course	Credit Hours	Cross Reference (if applicable)
CHE	111-01	General Chemistry I	3	n/a

TEXTBOOK [X] Required [ ] Not Required

Author Burdge, Julia Title "Chemistry", 4th ed.

Publisher McGraw Hill Date of Publication 2016

WORKBOOK [ ] Required [ ] Not Required

Author Title

Publisher Date of Publication

PLEASE ANSWER THE FOLLOWING QUESTIONS ON A SEPARATE SHEET OF PAPER AND ATTACH TO THIS FORM.

1. DESCRIPTION OF COURSE: Develop a brief description of the course as it will appear in the Catalog.

2. STUDENT LEARNING OBJECTIVES: List the student learning objectives for the course. Please relate these objectives to the mission and goals of the University and the Academic Unit. For general education courses, please indicate which student learning objectives address general education goals and the intended method of assessment. A minimum of four of the seven general education goals must be included.

   Example: Students will demonstrate their ability to compare and contrast two types of basket weaving. (Goal: Oral and Written Communication; Evidence: research paper and class presentation)

3. COURSE OUTLINE: Outline the topics/units that are to be taught.

4. EVALUATION: How do you plan to determine the grade in the course? Please include grading scale.

5. REQUIREMENTS:
   a. Examinations: State when tests are to be administered, including unit, mid-term, and final examinations.
   b. Reports: How many, length required, and what type (Oral, term and/or research, book critiques).
   c. Supplemental reading assignments or outside work required.
   d. Supplemental instruction aids: Audio visual aids, field trips, guest speakers, etc.

6. BOOKLIST

DEAN Date Copy Received

VICE PRESIDENT FOR ACADEMIC AFFAIRS Date Copy Received

Course Syllabus
CHE 111 General Chemistry I (3 credit hours)
Campbellsville University
Spring 2017, MWF 9:00-9:50 am

E. K. Sutton, SB 206
http://www.campbellsville.edu/eksutton
E-mail: eksutton@campbellsville.edu
Ph#: 270-789-5327

I. COURSE DESCRIPTION: An introductory chemistry course for science majors and minors. Descriptive chemistry is used to illustrate the basic principles of chemistry. CHE 113 must be taken concurrently. Prerequisite: Math ACTE of 21 or MTH 111 (or above) or concurrent enrollment and CHE 100 or CHE 110 or consent of the chemistry department.

II. COURSE OBJECTIVES

A. **General Education Curriculum Objectives (GECO):** (numbered to correspond to the listing in the University catalog)

2. Critical Thinking: Students will demonstrate the ability to reflect on theories and issues in a systematic fashion.
4. Ethics: Students will demonstrate an understanding of Christian values and ethical standards in order to make mature and informed decisions concerning moral issues.
5. Oral and Written Communication: Students will demonstrate the ability to express ideas, beliefs, and information in an organized, precise, and persuasive manner.
6. Quantitative Literacy: Students will demonstrate the ability to understand and utilize mathematical and/or logical relationships to analyze data, to construct and assess arguments, and to make sound judgments in quantitative situations that arise in daily life.
7. Social Responsibility and Citizenship: Students will demonstrate an understanding of personal and social responsibility in a changing global environment so that students can make contributions to their respective discipline and to society as a whole.

B. **Student Learning Outcomes (SLO)**: Students will (numbered to correspond to the pertinent General Education Curriculum Objective [GECO])

1. Students should comprehend and use basic chemical principles, terminology, and the uses of scientific technology and their implications. (GECO 6; Evidence: homework, quizzes, exams)
2. Students will recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing. (GECO 2,5; Evidence: homework, quizzes, exams, term project)
3. Students will demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies. (GECO 4,6,7; Evidence: quizzes, exams)
4. Students will demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture. (GECO 4,6,7; Evidence: homework, term project)
5. Students will be able to explain several chemical issues facing society in the 21st century and present arguments based on scientific fact that can be considered as possible solutions. (GECO 2,5, 6,7; Evidence: exams, term project)
6. Students will demonstrate the ability to apply scientific principles and methods to support hypotheses, apply theories to explain past observations and to predict answers to new questions. (GECO 2,6; Evidence: homework, quizzes, exams)
7. Students should be able to use mathematical skills in the description of chemical phenomena and understand the critical thinking skills chemists use in problem solving. (GECO 2,6; Evidence: homework, quizzes, exams)
8. Students should be able to read, understand, and apply scientific information through thinking more critically, discussing more meaningfully, arguing more persuasively, and writing more effectively. (GECO 2,5; Evidence: term project)

C. **Program Learning Outcomes (PLO):** (numbered to correspond to the program learning outcomes listed in the program assessment document)

1. The student will be able to demonstrate a solid understanding of the core principles in the traditional subdivisions of chemistry: Analytical, Inorganic, Organic and Physical. ((Evidence: homework, quizzes, exams)
3. The student will be able to conduct a thorough literature search, interpret, and utilize scientific literature from various sources including libraries, the internet, and electronic databases. (Evidence: term project)

4. The student will be able to articulate chemical information/data/ideas clearly and effectively in speech and in writing in an acceptable presentation format. (Evidence: term project, exams)
6. The student will demonstrate critical thinking skills in chemistry: interpretation, evaluation, explanation, and scientific inquiry; how to ask appropriate questions, gather relevant information effectively and creatively, and reason logically from this information to make reliable conclusions**.** (Evidence: homework, quizzes, exams, term project)

D. **Course Specific Objectives (CSO):**

1. The student will learn the basic terminology of chemistry, including SI units, elemental names and symbols, and simple naming strategies for chemical compounds.
2. The student will learn to use dimensional analysis to numerically solve a wide variety of chemical problems, including calculating formula weights, limiting reagents, moles, molarity, and reaction yields.
3. The student will learn the basic concepts of the structure of atoms and atomic and molecular orbitals.
4. The student will learn to predict bonding in molecules with Lewis structures and to predict molecular shapes using VSEPR theory.
5. The student will learn to balance equations and to predict the products of simple reactions including simple acid/base reactions and redox reactions.

IV. COURSE OUTLINE

A. Matter, Measurement & Problem Solving
B. Atoms & Elements
C. Molecules, Compounds & Chemical Equations
D. Chemical Quantities & Aqueous Solutions
E. Gases
F. Thermochemistry
G. Quantum Theory/Electronic Structure
H. Periodic Relationships
I. Chemical Bonding
J. Liquids, Solids, & Intermolecular Forces

V. COURSE EVALUATION

The following is a breakdown of the course evaluation.

Hourly Exams (3 x 100 pts)	54%	91-100%	A
Comprehensive Final Exam (150 pts)	24%	81-90%	B
In-Class Quizzes	12%	71-80%	C
Homework	10%	61-70%	D
		Below 60	F

- **If, for any reason, you cannot continue to attend this class, be certain you DROP IT OFFICIALLY. Otherwise you will automatically receive a failing grade.**
- **Any student who does not obtain at least 50% of the lecture components (homework/ quizzes, hourly exams and final) will fail the course.**

Numbers to Remember:

Security Cell Phone 270-403-3611	Security Office Phone 270-789-5555	Natural Science Division Office 270-789-5065

Dates to Remember:

M.L. King, Jr. Day-No Class	Jan 16	First bi-term ends	Mar 11
Evening Classes begin	Jan 17	Spring Break- No Classes	Mar 13-17
Day Classes start	Jan 18	2nd bi-term begins	Mar 20
Last day add /register	Jan 20	Last day to drop a semester class with "W"	Apr 13
Last Day to Drop 1st bi-term class with "W"	Feb 24	Easter Break-No Classes	Apr 14-17
Midterm Week	Mar 6-10	Finals Week	May 8-12

VI. COURSE REQUIREMENTS

A. ***Calculator:*** A scientific calculator (with ln x, ex, log x, 10x, yx functions) is essential. No programmable calculators will be allowed on exams, and no sharing of calculators will be allowed on exams or quizzes. I will make some simple scientific calculators available for exams.
B. ***Web Access Card:*** General Chemistry WebAssign Online Access Card (Cost: ~$30.00)
C. ***Examinations****:* Three hourly exams (100 points each) will be given throughout the semester. A COMPREHENSIVE final valued at 100-300 points will be given at the end of the semester. NO MAKE-UP

EXAMS WILL BE GIVEN. If an exam is missed throughout the semester, the value of the final exam will increase in proportion to the number of exams missed. The maximum number of exams that may be missed is two. The final exam may not be missed.

D. ***In-Class Quizzes:*** In order to succeed in any course, it is necessary to be able to apply the theory learned. One means of doing this is by working problems that deal with the topics discussed. Throughout the semester, UNANNOUNCED quizzes (10 to 25 points each) will be given to test your knowledge of the various topics being discussed. It is to your advantage, as a student, to look over and work problems that occur at the end of the chapters to be certain that you understand the material covered in the given chapter. At the end of the semester, the lowest quiz score will be dropped, and the remaining quizzes will be averaged and scaled to 100 points for final grade computation. NO MAKE-UP QUIZZES will be given.

E. ***Homework*:** Homework will be assigned for each chapter. Students are required to complete online homework assignments. Each assignment will be available only during a specified period. You may use your textbook, your notes, a calculator, and scratch paper when working on the online homework assignments, but you MAY NOT receive any help or give any help to anyone completing an online homework assignment. It is recommended that the chapter homework assignments be taken as soon as possible after the chapter has been covered in class. All homework assignments must be completed by the deadlines set by the instructor. Any homework assignment not completed by the deadline will be recorded as a zero. At the end of the semester, your BEST ten online homework assignment scores will be averaged for your homework grade. More details about the online homework assignments will be given in class. A series of suggested homework problems is given below in addition to the online homework assignments. Homework problems from the text will not be collected or graded, however many quiz and exam questions will be based upon these recommended problems. It is recommended that each student purchase and **USE A BOUND, PAGE-NUMBERED NOTEBOOK** (see the instructor for details, **SPIRAL NOTEBOOKS THREE-RING BINDERS, AND OTHER NOTEBOOKS THAT ARE DESIGNED TO ALLOW PAGE REMOVAL ARE NOT ACCEPTABLE**) to record these suggested homework problem solutions. The first two pages of the notebook must be left blank initially, and used only to record a table of contents that states the page number on which the homework for each chapter begins. Homework is the single most crucial part of the learning process in this class, so quizzes will usually include problems to solve that are related to current or past homework assignments. Because homework grades are assigned individually, homework must be worked out individually, therefore asking for, offering, receiving, or giving help to or from other students on the homework is strictly forbidden (see the section below on Academic Misconduct).

G. ***Attendance*:** The attendance policy of the University will be strictly enforced in this class. An attendance sheet will be passed around at each class meeting, and each student is responsible for initialing the sheet appropriately to record attendance. Students arriving to class more than 5 minutes late to class (by my watch) will be counted as a late arrival. Two late arrivals count as a full absence. After **six** absences, the student will be turned in to the Office of Academic Support. After **twelve** absences (the equivalent of four weeks of class), the student will be dropped from the course with a 'WA', this counts like an 'F' in grade-point average computation. If a student misses the final exam for a documented emergency (traveling early for Christmas vacation or Spring Vacation does not count as an emergency), then a grade of 'X' will be assigned for the course, and a special exam must be taken within one month after the student re-enters the University (contingent on approval by the course instructor and the Vice President for Academic Affairs), otherwise, the 'X' becomes a failing grade and is so recorded. Each student is responsible for all material covered in class, whether or not the student is in attendance, so always keep up with what was done during an absence by borrowing notes from other students and/or speaking with the instructor.

H. ***Classroom Behavior:***

1. Guests are only allowed in class at the discretion of and with prior approval from the instructor.
2. Electronic recording devices of any kind are not permitted except in special circumstances and with the specific permission of the instructor.
3. While you are expected to attend, and participate in this class, your cell phone, computer, and MP3 players are **not**. Pagers, cell phones, and similar items are disruptive to the entire class and **must be turned off** during class. **The owner of any such device that activates during class will be immediately excused from class and counted as absent for the entire period.**
4. Use of cell phones, computers, and MP3 players during examinations and quizzes will be considered academic dishonesty, which will result in a zero being awarded for the quiz or examination (No exceptions!).
5. Hats and caps are to be removed prior to entering the classroom.
6. Take care of any physiological needs *before* coming into the classroom.

7. Unacceptable student behaviors:
    a. Sleeping during class
    b. Chronic tardiness. Be here ready to learn when class begins.
    c. Reading, studying or working on materials for other classes.
    d. Chatting with your classmates when the instructor or other classmates are speaking.
    e. Prematurely packing up your books and bags before class has been dismissed.

I. ***Academic Misconduct*:** Students in this course will be working toward mastery of the material to satisfy the course objectives. Cheating in any form will not be tolerated and will immediately result in a failing grade for the course as well as the maximum penalty allowed by the University, which may include expulsion. ***This class is held to an honor system, meaning that cheating, allowing someone to cheat, or failing to report known cases of cheating are all considered academic misconduct.*** Cheating includes, but is not limited to, any attempt to present the work of another as your own; discussing or copying exams, quizzes, or homework with students who have not yet completed them; using "cheat sheets" on exams or quizzes; altering a test for re-grade, plagiarism of primary or secondary sources of information or using programmable calculators to store and/or recall prohibited information for an exam. Any student who refuses to allow a calculator to be inspected by the instructor upon request will not be allowed to use that calculator on the exam/quiz. Be aware that aggressive methods are used to protect the majority of you who are honest. For information about plagiarism and how to avoid it, consult the following website: http://www.indiana.edu/~academy/firstprinciples. Students will be asked to sign an integrity statement on each examination and quiz. The following statement reads as follows:

"I pledge on my honor that on this examination/quiz I have not received, given or seen any dishonest work.
Signature _____ Date _____"

VII. Book List

A. *Required*
1. One of the Following:
    i. *Chemistry: A Molecular Approach,* 2nd ed., Tro, Nivaldo J. , Prentice Hall, ISBN: 0-321-65178-2
    ii. *Chemistry: A Molecular Approach,* 3rd ed., Tro, Nivaldo J. , Prentice Hall, ISBN: 0321804716
    iii. CourseSmart eText for 3rd ed of *Chemistry: A MolecularApproach,* ISBN-13 978-0-321-81374-9
2. Web Assign web site: http:www.webassign.com

B. *Supplemental Reading (not required, but recommended)*
1. *General Chemistry: The Core*, 8th ed. K. W. Whitten, R. E. Davis, and M. L. Peck. (2007)
2. *Chemistry: Concepts and Problems: A Self-Teaching Guide* (Wiley Self-Teaching Guides) by Clifford C. Houk, Richard Post (Contributor). Paperback (February 1996)
3. *Hawley's Condensed Chemical Dictionary*, 13th Edition by Richard J. Lewis (Editor). Hardcover (September 19, 1997)
4. *Chemistry & Chemical Reactivity*, 7th ed. by John C. Kotz, Paul Treichel. Hardcover (2009)
5. *Schaum's Outline of Theory and Problems of College Chemistry* (Schaums Outline Series) by Jerome L. Rosenberg, Lawrence M. Epstein (Contributor). Paperback (January 1997)
6. *Basic Concepts of Chemistry* by Leo J. Malone. Paperback (February 2000)
7. *3,000 Solved Problems In Chemistry* by David E. Goldberg. Paperback (1988)
8. *General Chemistry: Principles and Modern Applications*, 9th ed. by Ralph H. Petrucci, John William Hill. (2007)
9. *Chemistry*, 9th ed. Raymond Chang, McGraw-Hill.

VIII. Disabilities

Campbellsville University is committed to reasonable accommodations for students who have documented physical and learning disabilities, as well as medical and emotional conditions. If you have a documented disability or condition of this nature, you may be eligible for disability services. Documentation must be from a licensed professional and current in terms of assessment. Please contact the Coordinator of Disability Services at 270-789-5192 to inquire about services.

IX. ACADEMIC SUPPORT

The Academic Support area, located in the Badgett Academic Support Center (BASC), exists to help students. At certain times, most students need some help with studying, choosing a career, major/minor, or assistance in a difficult course. The following services are available Career Services, Disability Services, tutoring, and the Citizens

Bank & Trust Writing Center. *These services are provided at no extra cost to the student.* Space is also available for individual and group study, and laptop computers are available for students to check-out and use within the building. Information about these services is accessible by clicking on the "Current Students" tab on the University website at www.campbellsville.edu. Information is also available by calling the Office of Academic Support at (270) 789-5064.

X. TITLE IX

Campbellsville University and its faculty are committed to assuring a safe and productive environment for all students. In order to meet this commitment and to comply with Title IX of the Education Amendments of 1972 and guidance from the Office of Civil Rights, the University requires all responsible employees, which includes faculty members, to report incidents of sexual misconduct shared by students to the University's Title IX Coordinator.

Title IX Coordinator:
Terry VanMeter
1 University Drive
UPO Box 944
Campbellsville, KY 42718

Administration Office 8A
Phone: 270-789-5016
Email: twvanmeter@campbellsville.edu

Information regarding the reporting of sexual violence and the resources that are available to victims of sexual violence is set forth at: www.campbellsville.edu/titleIX

Tentative Course Schedule

Week #	Date [Week of]	Topic	Reading Assignment	Online Homework Assignment	Suggested Homework Problems
1	**Jan 16**	M.L. King, Jr. Day- No Class Day Classes begin (Jan 18) Introduction		Intro. To WebAssign; Math Placement test Due 8/28/15, 9 pm	Even numbered problems in each topic section at the end of the chapter.
2	Jan 23	Chemistry: The Science of Change Atoms and the Periodic Table	1 2	CH. 1 HW due 9/5/15 8pm	
3	Jan 30	Atoms and the Periodic Table	2		
4	Feb 6	Quantum Theory & Electronic Structure of Atoms	3	CH.2 HW due 9/19/15 8pm	
5	Feb 13	Quantum Theory & Electronic Structure of Atoms Periodic Trends **Exam 1**	3 4 --	CH 3 HW due 9/23/15 8pm	
6	Feb 20	Periodic Trends Ionic & Covalent Compounds	4 5	CH 4 HW due 10/3/15 8pm	Even numbered problems in each topic section at the end of the chapter.
7	Feb 27	Ionic & Covalent Compounds Representing Molecules	5 6	CH 5 HW due 10/10/15 8pm	
8	Mar 6	**Mid-term Week** Representing Molecules Molecular Geometry, Intermolecular Forces and Bonding Theories **Exam 2**	-- 6 7 --	CH 6 HW due 10/17/15 8pm	
MAR 13-17		**Spring Break-No Classes**	---		
9	Mar 20	Molecular Geometry, Intermolecular Forces and Bonding Theories Chemical Reactions	7 8	CH 7 HW due 10/24/15 8pm	
10	Mar 27	Chemical Reactions	8		
11	Apr 3	Chemical Reactions in Aqueous Solutions	9	CH 8 HW due 11/7/15 8pm	
12	Apr 10	Chemical Reactions in Aqueous Solutions **Exam 3** Energy Changes in Chemical Reactions	9 -- 10	CH 9 HW due 11/14/15 8pm	
APR 14-17		**Easter Break – No Classes**			

Week #	Date [Week of]	Topic	Reading Assignment	Online Homework Assignment	Suggested Homework Problems
13	Apr 17	Energy Changes in Chemical Reactions	10		
14	Apr 24	Gases	11	CH 10 HW due 11/28/15 8pm	
15	May 1	Gases General Review	11	CH 11 HW due 12/5/15 8 pm	
16	**May 8**	**Finals Week— 8:00 am Monday, 8 May 2017**			
In the event of class cancellation for any reason (weather, instructor illness, etc.) exams or other scheduled activities will be administered in the next active class period.					

COURSE #: _____ SEMESTER: _____
COURSE TITLE: _____

Student's Acceptance of Course Policies

Please fill out and sign the following form and **return it no later than _____** to the instructor. **Use a blue or black pen (no pencil).**

I, _____, have read the entire syllabus describing the course
(Print your name neatly)

policies for this course, taught by Ms. E. K. Sutton. I fully understand these policies and I agree to comply

with them during the entire _____ term.

Signature: _____ Date: _____