CAMPBELLSVILLE UNIVERSITY

COURSE SYLLABUS

PLEASE TYPE. DATE January 17, 2017

ACADEMIC UNIT Natural Science FACULTY Elizabeth Kay Sutton

☐ Please check to indicate this course has a service learning component.

Discipline	Course# Section	Title of Course	Credit Hours	Cross Reference (if applicable)
CHE	100-01	Introduction to Chemistry	3	

TEXTBOOK ☑ Required ☐ Not Required

Author Tro, N.J. Title Introductory Chemistry Essentials

Publisher Prentice-Hall Date of Publication 2011

WORKBOOK

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 Michael K. Page Date Copy Received 1/18/2017

VICE PRESIDENT FOR ACADEMIC AFFAIRS Date Copy Received _____

CAMPBELLSVILLE UNIVERSITY **Spring 2017**
NATURAL SCIENCE DIVISION **E. K. Sutton**
COURSE SYLLABUS **SSC 206**
Office Hours: As Posted

I. **TITLE: CHE 100 Introduction to Chemistry**, three credits hours

II. **COURSE DESCRIPTION:** This course is designed to give the student an understanding of the basic principles of chemistry and the properties of the more common elements and chemical compounds. This course does not count on a science major or minor, but will satisfy the General Education requirement for Physical Science.

III. **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):** Student Learning Outcomes and General Education Curriculum Objectives associated with them.

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 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)
3. 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: homework, quizzes, exams)
4. Students will be able to analyze the information stated, formulate a "plan" to solve the problem, and mathematically solve or calculate the solution to a given problem. (GECO 2,6; Evidence: homework, quizzes, exams)
5. Students will follow ethical practices when conducting research, writing reports, using sources and when working with others. (GECO 4; Evidence: quizzes, exams, term project)
6. Students will exit the course with an appreciation of how chemistry is involved in everyday life and everyday things. (GECO 7; Evidence: homework, quizzes, exams, term project)
7. Students will form the habit of regularly reading science related articles. (GECO 7; Evidence: quizzes, exams, term project)
8. Students will develop the skills to question scientific data for their validity and reliability. (GECO 2; Evidence: homework, exams)

C. **Kentucky Teacher Education Standards (KTS):** Kentucky Teacher Standard (KTS) #1 is addressed in this course. Specific content objectives are listed below (see CSO).

1. KTS#1 Teacher Demonstrates Applied Content Knowledge: The teacher demonstrates a current and sufficient academic knowledge of certified content areas to develop student knowledge and performance in those areas. (Evidence/Assessment: lecture exams, quizzes, homework and written reports)

D. **Program Learning Objectives (PLO):** There are no specific program learning outcomes in this course. This course is not a requirement/elective in the Chemistry major/minor program.

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

1. The student will be able to use dimensional analysis to numerically solve a wide variety of chemical problems, including calculating formula weights, limiting reagents, moles, molarity, and reaction yields.
2. The student will illustrate the basic concepts of the structure of atoms and atomic orbitals.
3. The student will be able to predict bonding in molecules with Lewis structures and to predict molecular shapes using VSEPR theory.
4. The student will be able to write balanced chemical equations and to predict the products of simple reactions including simple acid/base reactions.
5. The student will illustrate an understanding of the kinetic-molecular theory of gases, liquids and solids.
6. The student will demonstrate an understanding of the behavior of acids, bases, and their salts, as well as the principles of titration.
7. The student will be able to explain the gas laws and the laws of thermodynamics, and how to apply them to solve chemical problems.
8. The student will be able to describe the basic principles of kinetics, equilibrium, and electrochemistry.

IV. COURSE OUTLINE

A. Introduction to the Chemical World	I. Electrons in Atoms & the Periodic Table
B. Measurements & Problem Solving	J. Chemical Bonding
C. Matter & Energy	K. Gases
D. Elements & Atoms	L. Liquids, Solids & Intermolecular Forces
E. Molecules & Compounds	M. Solutions
F. Chemical Composition	N. Acids and Bases
G. Chemical Reactions	O. Chemical Equilibrium
H. Chemical Quantities	P. Fundamentals of Nuclear Chemistry

V. EVALUATION

A. **Instructional Strategies:**

1. Students will learn science by doing science, in this course the science focus is on chemistry. Lecture provides the intellectual theory and conceptual understanding of chemistry, and the lab will apply that intellectual understanding.
2. Writing Component: This course will promote student learning by emphasizing writing skills. There will be several writing requirements. These requirements may include a term paper, article critiques, journals, portfolios, or other writing assignments.
3. Critical Thinking, Problem Solving, and Reasoning Skills will be reinforced throughout the study of chemistry and its applications in this course.

B. 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
Quizzes and Bell Ringers	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.

Dates to Remember:

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

C. **Emergency Contacts:**

Security Cell Phone: 270-403-3611 **Natural Science Division Office: 270-789-5065**
Security Office Phone: 270-789-5556

VI. COURSE REQUIREMENTS

A. ***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.

B. ***Quizzes and Bell-Ringers:*** 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 and in-class activities (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 have an understanding of the material covered in the given chapter. These activities will be given at the beginning and the end of class, therefore be sure that you are **ON TIME** for class. At the end of the semester, the lowest quiz score will be dropped, and the remaining quizzes and activities will be averaged and scaled to 100 points for final grade computation. NO MAKE-UP QUIZZES OR ACTIVITIES will be given. If you miss a quiz or activity a grade of zero will be recorded.

C. ***Calculator:*** You will need a NON-PROGRAMMABLE calculator that is able to perform the following functions: exponential functions, exponential notation, logarithms, and square roots.

D. ***Homework:*** Homework will be assigned for each chapter. Students are required to complete online homework assignments using the WebAssign online homework system (www.webassign.net)(cost ~ $30). 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, the 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** 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.

E. ***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.

F. ***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.

G. ***Academic Misconduct/Integrity***: Students in this course will be working toward mastery of the material to satisfy the course objectives. ***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. Violations will be dealt with according to the University and Divisional policies. A copy of the Division of Natural Sciences (DNS) policy on Academic Integrity will be available on the course TigerNet page. Please read this policy and take it very seriously. 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 assignment/examination/quiz I have not received, given or seen any dishonest work.

Signature _____ Date _____"

VII. BOOK LIST

A. TEXTBOOK:
   1. "Introductory Chemistry: Essentials", 4th ed. by Nivaldo J. Tro, Prentice-Hall. (2011) ISBN: 978-0-321-72599-8. (hardcover) *OR*
   2. 4th edition, CourseSmart eTextbook, Prentice-Hall, ISBN: 978-0-321-73004-6 *OR*
   3. Kindle version of the textbook: Introductory Chemistry: Essentials", 4th ed. by Nivaldo J. Tro.

B. "Introductory Chemistry: Concepts & Connections", 6th ed. by Charles H. Corwin, Prentice-Hall. (2011) ISBN: 978-0-321-66305-4

C. "Introductory Chemistry: Concepts & Connections", 5th ed. by Charles H. Corwin, Prentice-Hall. (2008) ISBN: 978-0-13-232148-8

D. *"Introduction to Chemical Principles"*, 9th ed. by H. Stephen Stoker, Prentice-Hall. (2008) ISBN: 978-0-13-237994-6

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	Topic	Reading Assignment Chapter	Suggested Extra Homework Problems (Textbook)
1	**16-Jan-17**	**Martin L. King Jr. Day -No Classes**		
	18-Jan-17	Course Introduction, Syllabus		
	20-Jan-17	The Chemical World	1	
2	23-Jan-17	Measurement and Problem Solving	2	56,66,78
	25-Jan-17	Measurement and Problem Solving	2	
	27-Jan-17	Measurement and Problem Solving	2	
3	30-Jan-17	Matter and Energy	3	
	1-Feb-17	Matter and Energy	3	42,56,74
	3-Feb-17	Atoms and Elements	4	
4	6-Feb-17	Atoms and Elements	4	70,106,108
	8-Feb-17	Molecules and Compounds	5	
	10-Feb-17	**Exam 1, Chap. 1-4**		
5	13-Feb-17	Molecules and Compounds	5	58,94,98
	15-Feb-17	Chemical Composition	6	
	17-Feb-17	Chemical Composition	6	
6	20-Feb-17	Chemical Composition	6	106,112,116
	22-Feb-17	Chemical Reactions	7	
	24-Feb-17	Chemical Reactions	7	
7	27-Feb-17	Chemical Reactions	7	36,50,92
	1-Mar-17	Chemical Quantities	8	
	3-Mar-17	Chemical Quantities	8	
8	6-Mar-17	Chemical Quantities	8	26,38,92
	8-Mar-17	Electrons in Atoms and the Periodic Table	9	
	10-Mar-17	**Exam 2, Chap. 5-8**		
9	**Mar 13-17, 2017**	**SPRING BREAK – NO CLASSES**		
10	20-Mar-17	Electrons in Atoms and the Periodic Table	9	
	22-Mar-17	Chemical Bonding	10	
	24-Mar-17	Chemical Bonding	10	52,78,82
11	27-Mar-17	Gases	11	38,58,92
	29-Mar-17	Gases	11	
	31-Mar-17	Gases	11	
12	3-Apr-17	Liquids, Solids, and Intermolecular Forces	12	38,58,66
	5-Apr-17	Liquids, Solids, and Intermolecular Forces	12	
	7-Apr-17	Solutions		
13	10-Apr-17	Solutions		
	12-Apr-17	**Exam 3, Chap. 9-12**	13	52,60,76,80
	14-Apr-17	**Good Friday—No Classes**	13	
14	**17-Apr-17**	**Easter Break-No Classes**		
	19-Apr-17	Acids and Bases	14	
	21-Apr-17	Acids and Bases	14	46,70,134
15	24-Apr-17	Acids and Bases	14	
	26-Apr-17	Chemical Equilibrium	15	36,92,110
	28-Apr-17	Chemical Equilibrium	15	
16	1-May-17	Radioactivity & Nuclear Chemistry	17	
	3-May-17	Radioactivity & Nuclear Chemistry	17	
	5-May-17	General Review		
17	8-May-17	**Final Exam, 8 a.m.**		

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: _____