

**Fundamentals of Chemistry II Syllabus, CH 152**  
**Master Syllabus**  
**Department of Chemistry, Washburn University**

**Purpose:** “A continuation of Chemistry 151. Includes a study of equilibrium, electrochemistry, thermodynamics, thermochemistry, and kinetics. Laboratory work deals with experimental studies on the theories of chemistry, qualitative analysis and independent laboratory projects. Three class periods, one hour of recitation, and one three hour laboratory period per week.”

The following skills will be emphasized to satisfy general education requirements in “The World of Nature” area of knowledge.

a) Reason mathematically and understand numerical data – you will be exposed to fundamental mathematical skills both in lecture and laboratory. You will be taught to use numerical data as a means of developing some of the fundamental laws of chemistry. Some direct applications of these skills will involve application and understanding of chemical kinetics, equilibrium, thermodynamics and electrochemistry.

b) Process information both in terms of synthesis and analysis – you will develop the skill of evaluating empirical evidence (both mathematical and nonmathematical) in terms of developing models that describe chemical systems. You will learn to assess the validity and non-validity of the information in terms of consistency with theoretical models. Where the information is consistent with the model further refinement of the model will be developed, and when the information is not consistent with the model more sophisticated models are developed which better describe empirical evidence. An example of this progression is in the bonding theories introduced.

c) Solve problems using the methods of analysis considering evidence, relevance, and validity. In both lecture and laboratory you will develop the skill of analyzing both numerical and other data to draw conclusions concerning chemical and physical systems. For example, during the laboratory inorganic qualitative analysis sequence you will develop identification strategies for a series of cations and anions. Based on a set of known reactions and observations, you will identify unknowns containing a subset of these cations and anions by interpretation of analogous reactions and observations.

The three skills discussed above will be evaluated 80% through lecture (homework, recitation, quizzes, and examination), and 20% through graded laboratory activities and reports.

**Prerequisite:** CH 151

**Textbook (as specified in the instructor syllabus):**

- *Chemistry: The Molecular Nature of Matter and Change*, 6<sup>th</sup> Ed., by M. S. Silberberg, 2012 (required)
- *Connect Chemistry*, on-line homework (required)
- *Laboratory Manual for Principles of General Chemistry prepared for Department of Chemistry, Washburn University*, 7<sup>th</sup> Ed. by J.A. Beran (required)
- *Supplemental Laboratory Experiments and Exercises*, Washburn University, 2012 (required)
- Student Lab Notebook with permanent or spiral binding, 100 carbonless duplicate sets, Hayden McNeil Specialty Products (required)
- At least 2 Dry Erase Markers for Recitation (required)
- Scientific calculator equipped with a solver function (required)

**Grading:** The instructor for the course and lab will state a specific grading scheme in supplemental syllabi. The lecture and recitation grade will comprise 80% of the overall grade and the laboratory grade will comprise the remaining 20%. The laboratory instructor is responsible for the laboratory section instruction and assessment, and at the end of semester will communicate an overall lab grade for each

student to the lecture instructor. As the lecture instructor is the overall instructor for the course, she/he will determine the final grade. As chemistry is an empirical science, a student's overall grade in the course will not be more than one letter grade higher than her/his laboratory grade.

Lecture Exams (typically four hourly exams and a final exam) contribute 65-80% of the points toward the final grade. Homework, recitation questions, quizzes, and special assignments contribute 0-15% of the points toward the final grade. Laboratory experiments, write-ups, questions and quizzes comprise the remaining 20%.

Student final grades typically average 2.5 on a scale of F = 0.0 to A = 4.0.

**Attendance:** Attendance is required for lecture, recitation and laboratory. If a university field trip or athletic event conflicts with a class time, it is the **student's responsibility** to make arrangements with the lecture or laboratory instructor to make up any missed material at the discretion of the lecture or laboratory instructor.

Laboratory participation is required for the successful completion of this course. If you are pregnant or become pregnant during this semester you should consult with your physician to decide if it is advisable for you to continue with this chemistry course. You may obtain a list of chemicals used during labs from your instructor.

**Laboratory Safety:** The following safety rules must be followed to ensure every student's safety. Special safety issues will be discussed for each experiment if necessary. Violation of any safety rules shall be dealt with (*e.g.* loss of points, removal from laboratory, etc.) at the discretion of the Instructor, Laboratory Supervisor, and/or Department Chair.

- Students must view the "Starting with Safety" video before working in the laboratory.
- Students must read, agree to, and sign the "Safety Regulations in the Laboratory" before working in the laboratory.
- In the unlikely event an accident occurs in the laboratory, the student(s) involved with the guidance of the laboratory instructor will submit a completed "Accident Report Form" to the Laboratory Supervisor.
- Students must wear safety goggles at all times in the lab.
- Students must wear shoes in the lab. Open-toed shoes, sandals, or shorts do not offer adequate protection against spilled chemicals or broken glass. Open-toed shoes or sandals are not allowed.
- Eating or drinking is not allowed in the lab.
- Chemicals should not be used for purposes other than those stated in the experiments.
- Wastes must be disposed of properly in accordance with instructions.

revised 1/12/12

## UNIVERSITY ADDITIONS – COURSE SYLLABUS

### **Mission of the University:**

Washburn University enriches the lives of students by providing opportunities for them to develop and to realize their intellectual, academic, and professional potential, leading to becoming productive and responsible citizens. We are committed to excellence in teaching, scholarly work, quality academic and professional programs, and high levels of faculty-student interaction. We develop and engage in relationships to enhance educational experiences and our community. *Washburn University Board of Regents, 2010*

### **Definition of a Credit Hour:**

For every credit hour awarded for a course, the student is typically expected to complete approximately one hour of classroom instruction, online interaction with course material, or direct faculty instruction and a minimum of two additional hours of student work each week for approximately 15 weeks for one semester or the equivalent amount of work over a different amount of time.

### **Academic Misconduct Policy:**

All students are expected to conduct themselves appropriately and ethically in their academic work. Inappropriate and unethical behavior includes (but is not limited to) giving or receiving unauthorized aid on examinations or in the preparation of papers or other assignments, or knowingly misrepresenting the source of academic work. Washburn University's Academic Impropriety Policy describes academically unethical behavior in greater detail and explains the actions that may be taken when such behavior occurs. For guidelines regarding protection of copyright, consult [www.washburn.edu/copyright/students](http://www.washburn.edu/copyright/students). For a complete copy of the Academic Impropriety Policy, contact the office of the Vice President for Academic Affairs, Bradbury Thompson Alumni Center Suite 200, or go on-line to: [www.washburn.edu/admin/vpaa/fachdbk/FHsec7.html#VIII](http://www.washburn.edu/admin/vpaa/fachdbk/FHsec7.html#VIII)

### **Disability Services:**

The Student Services Office is responsible for assisting in arranging accommodations and for identifying resources on campus for persons with disabilities. Qualified students with disabilities must register with the office to be eligible for services. The office **MUST** have appropriate documentation on file in order to provide services. Accommodations may include in-class note takers, test readers and/or scribes, adaptive computer technology, brailled materials. Requests for accommodations should be submitted at least two months before services should begin; however, if you need an accommodation this semester, please contact the Student Services Office immediately.

Location: Student Services, Morgan Hall Room 135 (new location)

Phone: 785-670-1629 or TDD 785-670-1025

E-Mail: [student-services@washburn.edu](mailto:student-services@washburn.edu)

Students may voluntarily identify themselves to the instructor for a referral to the Student Services Office.

### **Office of Academic Advising:**

As a Washburn student, you may experience difficulty with issues such as studying, personal problems, time management, or choice of major, classes, or employment. The Office of Academic Advising is available to help students either directly through academic advising, mentoring, testing and developing learning strategies or by identifying the appropriate University resource. If you feel you need someone with whom to discuss an issue confidentially and free of charge, contact Academic Advising in Morgan 122, 785-670-1942, [advising@washburn.edu](mailto:advising@washburn.edu).

**Withdrawal Policy:**

During fall and spring semesters, students may go online and withdraw from full semester courses through the second week of class with no recorded grade. From the third through the eleventh week a “W” is recorded for any dropped course. After the eleventh week, there are NO withdrawals, and a grade will be assigned for the course. These deadlines will be different for short-term, out-of-sequence, or summer courses. To view the deadline dates for your courses visit the “Last Day” Deadlines web page at:

<https://www2-prod.washburn.edu/self-service/coursedates.php>

**Attendance/Administrative Withdrawal:**

Although it is the student's responsibility to initiate course withdrawals, an instructor, after due notice to the student, may request withdrawal of the student from a course because of nonattendance through the same date as the last day a student may withdraw from a course. This would NOT absolve the student of financial responsibility for tuition/fees for the course in question. The inclusion of this information in the course syllabus is considered due notice.

**Official E-Mail Address:**

Your Washburn University e-mail address will be the official address used by the University for relaying important messages regarding academic and financial information and the University will consider this your official notification for important information. It may also be used by your instructors to provide specific course information. If you prefer to use an alternate e-mail address to receive official University notices, you can access your MyWashburn e-mail account, choose the "Options" tab, and select "Settings", scroll to the bottom of the screen, click enable forwarding and enter the e-mail address you would like your Washburn emails forwarded to in the “mail forwarding” area. Click add and then click on save changes. This will complete the process of forwarding your Washburn e-mail. It is your responsibility to ensure that your official e-mail box does not exceed your message quota resulting in the inability of e-mail messages to be accepted into your mailbox.

**Success Week:**

Success Week for undergraduate students is designated as the five week days preceding the first day of scheduled final examinations each Fall and Spring semester. Success Week is intended to provide students ample opportunity to prepare for final examinations. For academic programs, the following guidelines apply:

A. Faculty are encouraged to utilize Success Week as a time for review of course material in preparation for the final examination. If an examination is to be given during Success Week, it must not be given in the last three days of Success Week unless approved by the Dean or Department Chair. Assignments worth no more than 10% of the final grade and covering no more than one-fourth of assigned reading material in the course may be given.

B. Major course assignments (extensive research papers, projects, etc.) should be due on or before the Friday prior to Success Week and should be assigned early in the semester. Any modifications to assignments should be made in a timely fashion to give students adequate time to complete the assignments.

C. If major course assignments must be given during Success Week, they should be due in the first three days of Success Week. Exceptions include class presentations by students and semester-long projects such as a project assignment in lieu of a final. Participation and attendance grades are acceptable. The Success Week policy excludes make-up assignments, make-up tests, take-home final exams, and laboratory examinations. It also does not apply to classes meeting one day a week for more than one hour. All University laboratory classes are exempt from this policy.