Chemistry 103: Basic General Chemistry (4.0 Credits)
Fall Semester 2018

Instructor:	Dr. Kriya L. Dunlap
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Lecture:	MWF 3:30 – 4:30, REIC 201
Lab:	REIC 246, W 6:00 – 9:00 pm
	R 8:00 – 11:00 am
	R 11:30 am – 2:30 pm
	R 2:45 – 5:45 pm
Office Hours:	2:00 – 3:00 MWF, WRRB 230 or by appointment

Prerequisites: Placement or concurrent enrollment in DEVM F105 or higher

Required Course Material: Text book, "Introduction to General, Organic, and Biochemistry" 10th edition or higher (authors Bettelheim, Brown, March). A **calculator** capable of scientific notation is also required for this course and should be brought to both class and lab.

Course Overview: Chemistry 103 (4.0 credit course) is the first semester of a two semester series in general chemistry. This course will include the fundamentals of chemistry including historical and descriptive aspects. We will cover chapters 1 – 9 of the text, which will provide an understanding of matter, atoms, chemical bonds and interactions, chemical reactions, and intro to nuclear chemistry.

Blackboard: https://classes.uaf.edu. Syllabus and student grades will be posted on the UAF Blackboard website. Time sensitive information and reminders will be sent occasionally to all students using blackboard, so it is important that you verify that your email address attached to blackboard is correct and current. Lecture notes will be posted on course website.

Course Website: Our class website will provide a platform for discussing articles and posting class projects. You will also find the syllabus, lecture notes, reading material and important links. Please take a moment to check it out: https://chem103.community.uaf.edu

Instructor's expectations: It is strongly recommended that each student read the portion of the textbook that corresponds to the lecture, before the class begins.

Exams: The hour exams will cover material from the textbook chapters; any additional materials presented in class as well as associated concepts from the laboratory. *Exams cannot be made up unless you arrange a time before the exam and you have a valid excuse.* In the event of an unforeseen emergency, contact me as soon as possible. You may be asked to document your excuse. KEY WORDS: TALK TO ME. In general, no work will be accepted after the final exam.

Final Exam: The final exam will be held during finals week on Monday December, 13th from 1:00 – 3:00 pm. The final exam will be cumulative.

Quizzes: There will be a short quiz after completing a chapter. Quiz questions will resemble exam questions and will prepare you for the type of questions that will be on the exam, as well as give you a way to assess your strengths and weaknesses from that chapter. There are no make up quizzes.

Homework: Success in Chem 103 requires practice working through problems and applying the knowledge you have acquired. Higher achievement on exams is usually a direct result of time spent doing homework assignments in their entirety. We will work example questions in class but you should work more problems at home. I will give you suggested homework that corresponds to each chapter we cover in the book and an answer key. This will not be graded. Questions from the suggested HW and problems done in class often appear on quizzes and exams.

Article discussion: Additional homework will include discussion on articles and links that will be posted on our class website: http://chem103.community.uaf.edu. Students are expected to participate in a discussion on each post. Most articles will be news articles and interest pieces relating to topic covered in class. These are graded assignments.

Examples of point allocation:

No participation	Partial Participation	Full Participation
Does not post a comment or response	- post is not original and only paraphrases what others have said. - Just says something like, "I agree…" or "good idea" in response to another student's comments	Your contribution does one of the following: - Is original and contributes to class discussion. - is insightful, interesting or thought provoking. - summarizes an aspect of the article or link that is important to you and why it is. - Evokes question or concerns about the content. - offers a response that instills genuine interest or expands on another students post.
0 %	**50 %**	**100 %**

Final Projects: At the end of the class students will prepare and present group projects. These projects are intended to explain a core concept in the class, i.e. covalent bonding, atomic structure, states of matter, pH, nuclear chemistry etc. A full list of available topics will be given well in advance so that groups and subjects can be allocated and to allow for proper preparation time. These projects are intended to spur your creativity. Innovative approaches are encouraged, such as, Claymation, music videos, etc. Your final project will be presented in class and posted on our website. If you are strongly opposed to group projects and want to do a project by yourself, you can discuss your options with me when the time gets nearer to the due date. You will be expected to create a project with as much depth as a group project and will be graded on

the same criteria.

Laboratory: The purpose of the lab is to do hands-on investigation and to gain skills in scientific reasoning, experimental design, and use of chemicals and laboratory equipment. The labs are conducted by a graduate teaching assistant (TA) who will have specific office hours. Your Lab reports will be handed in each week, to be graded and returned by the teaching assistant. Any questions that you have regarding your lab should be directed at your TA. Eleven experiments are scheduled for the semester. The laboratory portion of your grade (100 points) will be based upon the average of your best ten lab grades. There **is no make-up labs** scheduled and **students must attend at least 8 labs in order to pass the course**. The first scheduled lab includes a safety review. STUDENTS MUST ATTEND THE SAFETY REVIEW IN ORDER TO STAY IN THE COURSE.

Computer access: Currently Department of Computing and Communications (DCC) maintains two open labs on campus: the Bunnell Lab, and the Node (Rasmussen library). The Node has 24-hour access.

Support Services: There are a large number of resources available to help students that may be having difficulty in the course or with a particular topic. The TA and myself both hold regular office hours. Students can also make an appointment to see me for help if office hours do not fit with the student's schedule. Additionally, chemistry department offers free tutoring services. Support can be obtained through the University of Alaska Library system, online resources. Additional services are available through Student Support Services (http://www.uaf.edu/sssp/) at UAF.

Disabilities Services:
We will work with the Office of Disabilities Services (http://www.uaf.edu/disability/) to provide accommodations for students with disabilities. If you have a disability and require special assistance, please contact the instructor as soon as possible. Students with disabilities must provide documentation of the disability and a written statement indicating any special arrangements that need to be made.

Cheating/Academic Dishonesty: The Chemistry & Biochemistry Department Policy on Cheating is: "*Any student caught cheating will be assigned a course grade of F. The student's academic advisor will be notified of this failing grade and the student will not be allowed to drop the course*." The Department considers performing unauthorized "dry labs" as cheating. Partnering during the lab is acceptable but lab reports must show your own calculations and ideas.

Amending this Syllabus: The instructor may make changes to this syllabus. Any changes will be clearly communicated via email sent to your UAF e-mail account and posted on Blackboard and course website.

Grading:

Quizzes	100 pts
Article discussion	100 pts
Laboratory	100 pts
Exam (2)	200 pts (100 pts each)
Final Project	100 pts
Final Exam	100 pts
Total	700 pts (max.)

Letter Grade	Percentage Grade	Total Points
A+	94.5 - 100	661.5 - 700
A	90.5 - 94.4	633.5 – 661.4
A-	87.5 - 90.4	612.5 – 633.4
B+	84.5 - 87.4	591.5 – 612.4
B	80.5 - 84.4	563.5 – 591.4
B-	77.5 - 80.4	542.5 – 563.4
C+	74.5 - 77.4	521.5 – 542.4
C	70.5 - 74.4	493.5 – 521.4
C-	67.5 - 70.4	472.5 – 493.4
D+	64.5 - 67.4	451.5 – 472.4
D	60.5 - 64.4	423.5 – 451.4
D-	57.5 - 60.4	402.5 – 423.4
F	57.4 or lower	401.8 or lower

Tentative Schedule

Day	Date	Chapter	Topic	Lab
M	27-Aug		Syllabus, Intro, Website	NO LAB
W	29-Aug	1	Scientific method, Measurements, conversion factors	
F	31-Sept	1	States of matter, Energy,	
M	3-Sept			Safety Lab
W	5-Sept	1	Density, Specific gravity, heat	
F	7-Sept	2	Dalton's theory, atoms	
M	10-Sept	2	Periodic table	
W	12-Sept	2	electron configurations	
F	14-Sept	3	Octet rule, anions, cations, ionic bonds	
M	17-Sept	3	Covalent bond	
W	19-Sept	3	Lewis structures, resonance	
F	21-Sept	3	Polarity	
M	24-Sept	4	Moles	
W	26-Sept	4	Balancing rxn, stoichiometry	
F	28-Sept	4	Limiting step, yield	
M	1-Oct	4	Redox reactions, heat of reaction	
W	3-Oct		**Exam Review**	
F	5-Oct		**Exam I**	
M	8-Oct	5	States of matter, gases	
W	10-Oct	5	Avogadro's law	
F	12-Oct	5	Intermolecular forces	
M	15-Oct	5	Liquids, solids, phase changes	
W	17-Oct	6	Solutions, solubility,	
F	19-Oct	6	Concentration	
M	22-Oct	6	Water as a solvent	
W	24-Oct	6	Colloids and colligative properties	
F	26-Oct	7	Reaction rates	
M	29-Oct	7	Chemical equilibrium	
W	31-Oct	7	Le Chatelier's principle	
F	2-Nov	8	Acids and bases	
M	5-Nov	8	Conjugate acids and bases	
W	7-Nov	8	pH, titrations	

F	9-Nov	8	Buffers	
M	12-Nov		**Exam Review**	
W	14-Nov		**Exam**	
F	16-Nov	9	Radioactivity, types of	
M	19-Nov	9	Half life, nuclear medicine	NO LAB
W	21-Nov		**Thanksgiving break**	
F	23-Nov		**Thanksgiving Break**	
M	26-Nov	9	fusion and fission	
W	28-Nov		Final presentations	
F	30-Nov		Final presentation	
M	3-Dec		Final presentations	
W	5-Dec		Final presentations	
F	7-Dec		**Final Exam Review**	
M	13-Dec		**Final Exam (1:00–3:00)**	