GENERAL CHEMISTRY 1 | CHEM 111

Instructor Name: Dr. Tykhon Zubkov

Instructor Contact Information:

Email tzubkov@bsu.edu Telephone 285-8146

Office: FB 404, Chemistry Department, Ball State University, Muncie

Canvas Address:
https://bsu.instructure.com/courses/171151

Zoom Room Address:
Follow the Zoom link on the Canvas site

Office hours in FB 418: Monday 5:00–6:00 pm, Tuesday 4:30–5:30 pm. Other times by appointment

Virtual Help Sessions on Zoom: to be announced Follow Zoom link on Canvas

You can call me Dr. Zubkov (he/him) or Dr. Z., or simply Professor.

COURSE INFORMATION

Course Description: Chemistry of the elements and their compounds with emphasis on basic principles. Atomic and molecular structure, chemical bonding, stoichiometry, properties of solutions, and nature of matter. This knowledge is useful for students of many majors, even if it is their only Chemistry course. But it also lays foundation for understanding of other Chemistry courses. Three hours of lecture and one three-hour laboratory period weekly. There is a lab fee associated with this course.

Course Modality / Structure: In-person lecture meets Monday, Wednesday, Friday 10:00-10:50 in FB 101. All course materials, assignments, and announcements will be posted through the Canvas site. The course will generally follow a weekly cycle of assignments and activities. It is recommended that you log into your course 3 to 4 times a week and check your official Ball State email account daily to view announcements and prepare for class.

Laboratory period day/time may differ for different sections. Please refer to your class schedule. Laboratory always starts in room FB 340. Laboratory portion of the course has a separate Canvas site.

You must pass both the lecture and the laboratory portion of the course in order to pass CHEM 111.

Course Time Commitment: It is expected that students will spend approximately 2 hours of study time outside of class for every one hour in class. Since we have 3 hours of lecture per week, you should expect to study the lecture material an average of 6 hours outside of class each week. Additional time is needed to prepare for weekly labs: read the Lab Manual, watch demonstration videos, take a lab quiz, etc.

COURSE MATERIALS

1. Textbook: Chemistry – by Overby, 15th ed, McGraw-Hill, 2024. Electronic version of the book is included in the next item.

2. Access for the ALEKS online homework system, which includes access to the e-book. Provided as a part of Ball State First Day. Can be purchased separately online from McGraw-Hill.

3. Laboratory Manual: CHEM 111 Lab Manual, 8th ed., Van-Griner publishers, 2024-2025. Provided by the bookstore via Ball State First Day. (Do NOT buy used versions of the manual. They change every year.)

4. Chemistry Safety Goggles available at campus area bookstores (NOT shop goggles).

5. Chemistry Lab Coat, knee-length with long sleeves. Available at campus area bookstores.

6. Poll Everywhere mobile app or access through web browser (free when registering with BSU email). Instructions are on Canvas.

7. TI-30X SERIES scientific calculator. On exams or quizzes, you may NOT use any other calculator.

COURSE ASSIGNMENTS AND ASSESSMENTS

Each category below contributes toward the course final grade:

1. **Examinations and Quizzes:** All exams and the comprehensive final exam are in-person (unless a change to online delivery is warranted), closed-book, and consist of short answer/problem solving questions. Quizzes may be in-person or online. Each exam or quiz is based on the following:
   - Chapter objectives (posted on Canvas)
   - Lecture material
   - Lecture activities, homework and reading assignments
   - Weekly problem sets that you work in Lab
   - Practical concepts learned in Lab.

   Exam and quiz questions will follow the announced coverage for each exam or quiz. Since chemistry is a science that naturally builds upon itself, you will have to use tools that you have previously mastered to solve new problems.

   You MUST take exams and quizzes in class at the scheduled time. See the schedule posted on Canvas. Final Exam: Wednesday, December 10, 9:45-11:45 am in FB 101. (Do not leave for the break before this day).

   Grading: Exams and quizzes will be graded by me and a small group of trained graders under my direct supervision. Partial credit will be given when earned. To earn partial credit, YOU MUST SHOW ALL OF YOUR WORK! I will strive to return your graded work to you the following lecture period.

   Exam and quiz scores will be posted on the Canvas site. The scores posted on Canvas indicate what I have on file. Please check them to ensure they are correct.

2. **Homework assignments through ALEKS platform:** You will receive weekly homework assignments. It is your duty to check the ALEKS due dates on Canvas and attempt to complete on time. If you miss the due date, you can complete the assignment with a small daily penalty. Late homework will be accepted until the last day of classes. Occasionally, you might receive a paper-based homework, which will not be accepted if late.

3. **In-class problem sets:** Periodically, I will assign videos to watch and/or reading material on new topics. You will then demonstrate your understanding by working on short problem sets in lecture. To facilitate active learning, you will be encouraged to discuss questions with other students and ask for help, if needed. The completed problems sets will be submitted during the same lecture and cannot be made up if missed.

4. **In-class polling sessions:** You will participate in Poll Everywhere in lecture and receive credit for your answers to make our class time more engaging and to provide you with real-time feedback on how well you are comprehending the course concepts. These polling activities cannot be made up if missed.

5. **Laboratory:** You will receive a separate syllabus for the lab. You are required to attend all scheduled laboratory sessions and complete all pre-lab exercises and lab reports. Percentage of all lab activities completed will produce a contribution toward your final grade. You must pass both the lecture and the laboratory portion of the course in order to pass CHEM 111.

COURSE STATEMENTS AND POLICIES

Course Grade Calculation

		Contribution factor toward combined %
Exams 100+100+100+150 = 450 pts Quizzes (drop 1 lowest): 10×10=100 pts	% calculated	0.62 (62 %)
Laboratory	% calculated	0.13 (13 %)
ALEKS online homework	% calculated	0.13 (13 %)
In-class problem sets	% calculated	0.06 (6 %)
In-class polling sessions	% calculated	0.06 (6 %)

Example with mock numbers:

Exams: 81+67+91+115 = 354 / 450 pts Quizzes: 20+15+23+21 = 79 / 100 pts	=435 / 550 pts = 78.7%	×0.62 = 48.8%	Combined 84.4%
Laboratory	94.1%	×0.13 = 12.2%	
ALEKS online homework	95.2%	×0.13 = 12.4%	
In-class problem sets	88.3%	×0.06 = 5.3%	
In-class polling sessions	95.2%	×0.06 = 5.7%	

Grading Scale: The final grade is based on the combined % of all credits earned in the course:

	87-90%, B+	77-80%, C+	67-70%, D+	
93-100%, A	83-87%, B	73-77%, C	63-67%, D	< 60%, F
90-93%, A-	80-83%, B-	70-73%, C-	60-63%, D-	

What if you are on the border (within 0.2%)? Will I bump you grade to the next bracket? I will give a consideration, if I see that you did everything in your power to earn credit. For example, can you answer "yes" to all of the following questions: (1) Have all exams and quizzes been taken? (2) Have all assignments and activities been completed, on time? (3) Have all bonus opportunities been completed?

Grading Policy

It is my policy that appropriate evaluation of your academic performance is an integral part of your learning experience. In the absence of mistake, fraud, bad faith or incompetence, I will be the key decision-maker on the assignment of grades. For information concerning grade appeals, consult the University Grade Appeal Policy and Process.

Academic misconduct will not be tolerated under any circumstances. In all instances of cheating, this professor pursues the harshest penalties available. Please read the Student Academic Ethics Policy and Code of Student Rights and Responsibilities. All work submitted for credit in this course must be your own. You are encouraged to collaborate in the learning process. But on the tests and assignments you will work as individuals. *You are not allowed to confer or converse with any other student, faculty, internet/social media site, or generative AI to seek answers on any material to be graded, unless specifically permitted. Doing so will result in triggering established University procedures regarding academic dishonesty. You are not allowed to use several Poll Everywhere accounts in the same lecture. This will classify as academic dishonesty.*

Artificial Intelligence Usage: You may use AI programs e.g. ChatGPT to help generate ideas, brainstorm, practice, or study. However, you should note that the material generated by these programs may be inaccurate, incomplete, or otherwise problematic. Beware that use may also stifle your own independent thinking and creativity. *You may not submit any work generated by an AI program as your own.* You must cite any AI-generated material that informed your work. Using an AI tool to generate content without proper attribution constitutes a violation of Ball State University's Student Academic Ethics Policy.

Freedom of Expression

The world of scientific knowledge is ever evolving.
In this course, we are committed to fostering a learning environment that values intellectual diversity, encourages free expression, and promotes open inquiry. As members of the Ball State Community, we treat each person in the Ball State community with civility, courtesy, compassion, and dignity and respect and learn from differences in people, ideas, and opinions. Please review Ball State University's Statement on Freedom of Expression, the resources on Ball State's Freedom of Expression webpage, and Ball State's Beneficence Pledge.

Communication Plan

- Please obtain your BSU computer login privileges if you haven't already.
- Canvas Inbox or email (tzubkov@bsu.edu) are the best ways to reach me. Expect a response within 24 hours, or within 48 hours on weekends, but I do my best to respond sooner.
- Call the Chemistry Front Office (285-8060) if you need to reach me while I'm teaching.
- All course materials, assignments, and announcements related to the lecture part will be posted through the Canvas site. It is recommended that you log into your course 3 to 4 times a week and check your official Ball State email account daily to view announcements and prepare for class.

Attendance Policy

- You are required to attend all lectures and laboratories in this class. I intend to take attendance in every lecture. I do not assign points for the attendance. However, lecture activities, such as polling responses or periodic in-class problem sets, contribute to your course grade. These activities cannot be made up if missed.
- Please contact me in advance if you will have an absence due to a scheduled conflict (for example, school-related activities, religious holy day observations, etc.).
- If you must miss due to illness, helping ill roommate, family emergency, severe weather, or other valid reasons, please contact me by e-mail as soon as you are able.
- I will follow University policies regarding student absences.

Chemical Use and Safety

Students enrolling in this course will be working with a variety of chemicals, some of which could be irritating or hazardous. Proper and accepted good laboratory practice will always be utilized to minimize or eliminate any adverse contact. Individuals are required to wear flat-soled shoes that cover the entire foot (no ballet flats, sandals, flip flops or high heels) and clothes plus lab coat should fully cover your body from shoulders to feet. However, individuals with sensitive medical conditions (including pregnancy) should take precautions such as wearing additional protective garments, delaying enrollment, or not enrolling in this course. Chemical Safety Data Sheets can be searched on Risk and Safety Solutions by logging in with your BSU credentials. Please consult with your instructor and health care professional if you have any concerns.

Teacher Education Statement

If you are a teaching major, or if you think you will ever decide to be a teaching major, then you should save the required assignments, exams, and laboratories (also known as artifacts) from this course for a teaching portfolio. For more information, check Education Majors

UNIVERSITY POLICIES

University Statement

We are committed to ensuring that all members of the community are welcome, through valuing the various experiences and worldviews represented at Ball State and among those we serve. We promote a culture of respect and civil discourse. If you need course adaptations or accommodations because of a disability, please contact the instructor of record as soon as possible. Ball State's Disability Services office coordinates services for students with disabilities; documentation of a disability needs to be on file in that office before any accommodations can be provided. Disability Services can be contacted at 765-285-5293 or dsd@bsu.edu.

Attendance Policies

Faculty are required to establish attendance policies for their courses and ensure that they communicate these policies through their course syllabi. In some cases, faculty may be asked to provide the last date of attendance for a student in association with financial aid requirement.

Students are expected to review course syllabi regarding absence guidelines and follow those guidelines. Course attendance policies must be consistent with University policy. The University has a number of specific policies regarding student absences that are housed within different areas. Explore Ball State course attendance policies.

University Grade Appeal Policy

If you believe you received a final course grade that does not reflect your performance due to fairness or a procedural issue, you have the right to file an appeal within 5 school days after final grades are posted by the Office of the Registrar. Review the University Grade Appeal Policy and Process.

Learning Center

The Learning Center offers free Tutoring and Academic Coaching for many courses at Ball State. Students can make appointments for online (Zoom) or in-person (NQ 350) appointments. To make an appointment, visit myballstate.bsu.edu and click on “Navigate” in the Academic Tools section, or just go directly to bsu.navigate.eab.com.

Testing accommodations for students with disabilities are available for students who have received the appropriate documentation from Disability Services. Tests may be administered in the Learning Center. Supplemental Instruction is available in select courses. If you have an SI leader for your course, that person will provide students with information the first week of school regarding weekly study sessions. For more information about Learning Center programming, visit bsu.edu/learningcenter or call 765-285-1006. Follow us on Instagram: BallStateLC.

CHEM 111 Tentative Course Schedule

Week	Chapter	Monday	Tuesday	Wednesday	Thursday	Friday
1	Ch. 1-2	**August** 18	19 *Lab 1 Math Review*	20	21	22 *Add/Drop end 9/24*
2	Ch. 2	25	26 *Lab 2 Density*	27	28	29 **Quiz 1**
		Monday	Tuesday	Wednesday	Thursday	Friday
3	Ch. 3	**September** 1 ***Holiday***	2 *Lab 3 Mixture*	3	4	5
4	Ch. 3	8	9 *Lab 4 Conductivity*	10 **Exam 1**	11	12
5	Ch. 4	15	16 *Lab 5 CopperChlor*	16	18	19
6	Ch. 4	22	23 *Lab 6 Precipitation*	24 **Quiz 2**	25	26
		Monday	Tuesday	Wednesday	Thursday	Friday
7	Ch. 4	29	30 *Lab 7 Titration*	**October** 1	2	3
8	Ch. 7	6 ***Break***	7 ***Break*** *Virtual Lab this week*	8 **Exam 2**	9	10
9	Ch. 7	13	14 *Lab 9 Absorbance*	15	16	17
10	Ch. 8	20	21 *Lab 10 Alum*	22 **Quiz 3**	23	24
11	Ch. 9	27 *Web Withdrawal ends*	28 *Lab 11 Lewis str.*	29	30	31
		Monday	Tuesday	Wednesday	Thursday	Friday
12	Ch. 10	**November** 3	4 *Lab 12 VSEPR*	5 **Exam 3**	6	7
13	Ch. 10,5	10	11 *Lab 13 Gas Laws*	12	13	14
14	Ch. 5	17	18 *Lab 14 Gas Const*	19 **Quiz 4**	20	21
15	Ch. 5	24	25 *No lab*	26 ***Break***	27 ***Break***	28 ***Break***
		Monday	Tuesday	Wednesday	Thursday	Friday
16	Ch. 6	**December** 1	2 *Lab 15 Enthalpy*	3	4	5
17	Review	8	9	10 **Final Exam** **9:45-11:45 a.m.**	11	12

Lecture material and testing dates may vary.