

CHEM 1010

Introductory Chemistry

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Course Description

This introductory chemistry course explores the nature of chemical matter and how that can be understood in terms of the atomic model for chemistry. The nature of chemicals in gas, liquid, and solid forms will be presented. The quantitative aspects of science and chemistry are explored. The basics of chemical reactivity, balancing equations, conservation of mass, conservation of energy, and acid base chemistry will be covered.

The course follows the outline of the textbook. Material from Chapters 1 through 12 is included in this 1 semester course.

TEXT BOOK:

Auto Access eBook: Basic Chemistry eBook, 8e by Zumdahl

This course requires all-inclusive digital materials that are provided to you at a lower price than traditional printed materials. These materials are paid for through an "Auto Access Digital Materials" charge placed on your student account when you registered for the course. **To access the materials, visit the Canvas course site.** For more details, including dates, deadlines, and opt-out info, visit your student Auto Access Portal: <https://portal.verba.io/usu/login> (<https://portal.verba.io/usu/login>)

Fees

Other than the TEXT BOOK fee described above - (and tuition), there are no other additional fees for this course.

Course Objectives

By the end of this course, you will be able to:

1. To understand the basic elements of the atomic model used to describe matter.
2. To use the basic quantitative tools of chemistry and carry out stoichiometric calculations.
3. To apply chemical models to understand material behavior and the nature of materials.
4. To understand basic chemical reactivity, chemical energy, thermal energy, and potential energy.
5. To explore the application of chemical science to everyday life.
- 6.

Instructor

Prof. Mark Noirot, marknoirot@usu.edu; phone 435-678-8193

Course Resources

Required Textbook

Basic Chemistry; S.S. Zumdahl, D.J. DeCoste, Eighth edition, 2015, Brooks/Cole, Cengage Learning; ISBN: 13-978-1-285-45314-9

Evaluation Methods and Criteria

Grades will be determined by scores on 4 exams, and homework quizzes. Exams will be weighted approximately 65%, homework quizzes 35%. These values may be changed. Details are shown in Canvas and are subject to change every semester.

Letter Grades will be assigned based on an adjusted curve with values determined by the official USU grade system.

Exams should not be missed and can be made up only at the instructor's discretion. Quizzes cannot be made-up.

Grade Scheme

The following grading standards will be used in this class:

Grade	Range
A	100 % to 93.0%
A-	< 93.0 % to 90.0%
B+	< 90.0 % to 87.0%
B	< 87.0 % to 83.0%
B-	< 83.0 % to 80.0%
C+	< 80.0 % to 77.0%
C	< 77.0 % to 73.0%
C-	< 73.0 % to 70.0%

Grade	Range
D+	< 70.0 % to 67.0%
D	< 67.0 % to 60.0%
F	< 59.0 % to 0.0%

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Course Schedule/Outline

Outline dates and assignments

Class Meetings:

Tuesdays via Zoom / Learning Centers, 10:30 am --- recordings available when possible.

Attendance and Excused Absences Policy

Insert course policy content here.

Nonattendance Policy

Students May Be Dropped For Nonattendance

If a student does not attend a class during the first week of the term or by the second class meeting, whichever comes first, the instructor may submit a request to have the student dropped from the course. **(This does not remove responsibility from the student to drop courses which he or she does not plan to attend.)** This option is typically used for classes that are full and the instructor is trying to make a seat available for another student, but may be considered for other courses. Requests must be made during the first 20 percent of the course and will be considered on an individual student basis. Students who are dropped from courses will be notified by the Registrar's Office through their preferred e-mail account (see [2018-2019 General Catalog](#) (<http://catalog.usu.edu/content.php?catoid=12&navoid=3955>)).

Assumption of Risk

All classes, programs, and extracurricular activities within the University involve some risk, and certain ones involve travel. The University provides opportunities to participate in these programs on a voluntary basis. Therefore, students should not participate in them if they do not care to assume the risks. Students can ask the respective program leaders/sponsors about the possible risks a program may generate, and if students are not willing to assume the risks, they should not select that program. By voluntarily participating in classes, programs, and extracurricular activities, a student does so at his or her own risk. General information about University Risk Management policies, insurance coverage, vehicle use policies, and risk management forms can be found at: <http://www.usu.edu/riskmgmt/> (<http://www.usu.edu/riskmgmt/>).

Library Services

All USU students attending classes in Logan, at our Regional Campuses, or online can access all databases, e-journals, and e-books regardless of location. Additionally, the library will mail printed books to students, at no charge to them. Students can also borrow books from any Utah academic library. Take advantage of all library services and learn more at libguides.usu.edu/rc. (<http://libguides.usu.edu/rc>)

Online Course Fee

A fee of \$15 per credit is applied to all online courses to sustain current digital technologies and support services required for engaging and effective online learning.

Classroom Civility

Utah State University supports the principle of freedom of expression for both faculty and students. The University respects the rights of faculty to teach and students to learn. Maintenance of these rights requires classroom conditions that do not impede the learning process. Disruptive classroom behavior will not be tolerated. An individual engaging in such behavior may be subject to disciplinary action. Read [Student Code Article V Section V-3](#) (<https://studentconduct.usu.edu/studentcode/article5>) for more information.

University Policies & Procedures

COVID-19 Classroom Accommodations

To ensure that you receive the appropriate accommodation for COVID-19 related challenges, the University requires you to fill out the [COVID-19 Questionnaire](#) (<https://www.usu.edu/covid-19/questionnaire/index.php>). Upon doing so, the University [COVID CARE Team](#) (<https://www.usu.edu/covid-19/if-you-are-sick/care-team.php>) will contact you to determine your needs and how to support you. The CARE Team will also contact your instructors and provide important direction on how best to accommodate your needs. For additional reference, please see USU's [Attendance and Excused Absence](#) (<https://catalog.usu.edu/content.php?catoid=12&navoid=3160>) policy and the [COVID-19 Classroom Accommodations](#) (<https://www.usu.edu/covid-19/operations/accomodations>) page.

Academic Freedom and Professional Responsibilities

Academic freedom is the right to teach, study, discuss, investigate, discover, create, and publish freely. Academic freedom protects the rights of faculty members in teaching and of students in learning. Freedom in research is fundamental to the advancement of truth. Faculty members are entitled to full freedom in teaching, research, and creative activities, subject to the limitations imposed by professional responsibility. [Faculty Code Policy #403](http://www.usu.edu/hr/files/uploads/Policies/403.pdf) (<http://www.usu.edu/hr/files/uploads/Policies/403.pdf>) further defines academic freedom and professional responsibilities.

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Academic Integrity – "The Honor System"

Each student has the right and duty to pursue his or her academic experience free of dishonesty. To enhance the learning environment at Utah State University and to develop student academic integrity, each student agrees to the following Honor Pledge:

"I pledge, on my honor, to conduct myself with the foremost level of academic integrity."

A student who lives by the Honor Pledge is a student who does more than not cheat, falsify, or plagiarize. A student who lives by the Honor Pledge:

- Espouses academic integrity as an underlying and essential principle of the Utah State University community;
- Understands that each act of academic dishonesty devalues every degree that is awarded by this institution; and
- Is a welcomed and valued member of Utah State University.

Academic Dishonesty

The instructor of this course will take appropriate actions in response to Academic Dishonesty, as defined the University's Student Code. Acts of academic dishonesty include but are not limited to:

- **Cheating:** using, attempting to use, or providing others with any unauthorized assistance in taking quizzes, tests, examinations, or in any other academic exercise or activity. Unauthorized assistance includes:
 - Working in a group when the instructor has designated that the quiz, test, examination, or any other academic exercise or activity be done "individually;"
 - Depending on the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments;
 - Substituting for another student, or permitting another student to substitute for oneself, in taking an examination or preparing academic work;
 - Acquiring tests or other academic material belonging to a faculty member, staff member, or another student without express permission;
 - Continuing to write after time has been called on a quiz, test, examination, or any other academic exercise or activity;
 - Submitting substantially the same work for credit in more than one class, except with prior approval of the instructor; or engaging in any form of research fraud.
- **Falsification:** altering or fabricating any information or citation in an academic exercise or activity.
- **Plagiarism:** representing, by paraphrase or direct quotation, the published or unpublished work of another person as one's own in any academic exercise or activity without full and clear acknowledgment. It also includes using materials prepared by another person or by an agency engaged in the sale of term papers or other academic materials.

For additional information go to: [ARTICLE VI. University Regulations Regarding Academic Integrity](https://studentconduct.usu.edu/studentcode/article6) (<https://studentconduct.usu.edu/studentcode/article6>)

Sexual Harassment/Title IX

Utah State University is committed to creating and maintaining an environment free from acts of sexual misconduct and discrimination and to fostering respect and dignity for all members of the USU community. Title IX and [USU Policy 339](http://www.usu.edu/policies/339) (<http://www.usu.edu/policies/339>) address sexual harassment in the workplace and academic setting.

The university responds promptly upon learning of any form of possible discrimination or sexual misconduct. Any individual may contact USU's [Office of Equity](https://equity.usu.edu) (<https://equity.usu.edu>), for available options and resources or clarification. The university has established a complaint procedure to handle all types of discrimination complaints, including sexual harassment ([USU Policy 305](http://www.usu.edu/policies/305) (<http://www.usu.edu/policies/305/>)), and has designated the Office of Equity Director/Title IX Coordinator as the official responsible for receiving and investigating complaints of sexual harassment.

Withdrawal Policy and "I" Grade Policy

Students are required to complete all courses for which they are registered by the end of the semester. In some cases, a student may be unable to complete all of the coursework because of extenuating circumstances, but not due to poor performance or to retain financial aid. The term 'extenuating' circumstances includes: (1) incapacitating illness which prevents a student from attending classes for a minimum period of two weeks, (2) a death in the immediate family, (3) financial responsibilities requiring a student to alter a work schedule to secure employment, (4) change in work schedule as required by an employer, or (5) other emergencies deemed appropriate by the instructor.

Students with Disabilities

USU welcomes students with disabilities. If you have, or suspect you may have, a physical, mental health, or learning disability that may require accommodations in this course, please contact the [Disability Resource Center \(DRC\)](http://www.usu.edu/drc) (<http://www.usu.edu/drc>) as early in the semester as possible (University Inn # 101, (435) 797-2444, drc@usu.edu (<mailto:drc@usu.edu>)). All disability related accommodations must be approved by the DRC. Once approved, the DRC will coordinate with faculty to provide accommodations.

Students who are at a higher risk for complications from COVID-19 or who contract COVID-19 may also be eligible for accommodations.

Diversity Statement

Regardless of intent, careless or ill-informed remarks can be offensive and hurtful to others and detract from the learning climate. If you feel uncomfortable in a classroom due to offensive language or actions by an instructor or student(s) regarding ethnicity, gender, or sexual orientation, contact:

- Division of Student Affairs: <https://studentaffairs.usu.edu> (<https://studentaffairs.usu.edu>), (435) 797-1712, studentservices@usu.edu (<mailto:studentservices@usu.edu>), TSC 220
- Student Legal Services: <https://ususa.usu.edu/student-association/student-advocacy/legal-services> (<https://ususa.usu.edu/student-association/student-advocacy/legal-services>), (435) 797-2912, TSC 326,
- Access and Diversity: <http://accesscenter.usu.edu> (<http://accesscenter.usu.edu>), (435) 797-1728, access@usu.edu (<mailto:access@usu.edu>); TSC 315
- Multicultural Programs: <http://accesscenter.usu.edu/multiculture> (<http://accesscenter.usu.edu/multiculture>), (435) 797-1728, TSC 315
- LGBTQA Programs: <http://accesscenter.usu.edu/lgbtqa> (<http://accesscenter.usu.edu/lgbtqa>), (435) 797-1728, TSC 3145

- Provost's Office Diversity Resources: <https://www.usu.edu/provost/diversity> [\(https://www.usu.edu/provost/diversity/\)](https://www.usu.edu/provost/diversity/), (435) 797-8176

You can learn about your student rights by visiting:

The Code of Policies and Procedures for Students at Utah State University: <https://studentconduct.usu.edu/studentcode> (<https://studentconduct.usu.edu/studentcode/>)

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Grievance Process

Students who feel they have been unfairly treated may file a grievance through the channels and procedures described in the Student Code: [Article VII](https://studentconduct.usu.edu/studentcode/article7) (<https://studentconduct.usu.edu/studentcode/article7>).

Full details for USU Academic Policies and Procedures can be found at:

- [Student Conduct](http://www.usu.edu/studentconduct) (<http://www.usu.edu/studentconduct>)
- [Student Code](https://studentconduct.usu.edu/studentcode/) (<https://studentconduct.usu.edu/studentcode/>)
- [Academic Integrity](https://studentconduct.usu.edu/studentcode/article6) (<https://studentconduct.usu.edu/studentcode/article6>)
- [USU Academic Policies and Procedures](http://catalog.usu.edu/content.php?catoid=4&navoid=546) (<http://catalog.usu.edu/content.php?catoid=4&navoid=546>)
- [Academic Freedom and Professional Responsibility Policy](http://www.usu.edu/hr/files/uploads/Policies/403.pdf) (<http://www.usu.edu/hr/files/uploads/Policies/403.pdf>)

Emergency Procedures

In the case of a drill or real emergency, classes will be notified to evacuate the building by the sound of the fire/emergency alarm system or by a building representative. In the event of a disaster that may interfere with either notification, evacuate as the situation dictates (i.e., in an earthquake when shaking ceases or immediately when a fire is discovered). Turn off computers and take any personal items with you. Elevators should not be used; instead, use the closest stairs.

Mental Health

Mental health is critically important for the success of USU students. As a student, you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce your ability to participate in daily activities. Utah State University provides free services for students to assist them with addressing these and other concerns. You can learn more about the broad range of confidential mental health services available on campus at [Counseling and Psychological Services \(CAPS\)](https://counseling.usu.edu) (<https://counseling.usu.edu>).

Students are also encouraged to download the ["SafeUT App"](https://healthcare.utah.edu/uni/programs/safe-ut-smartphone-app) (<https://healthcare.utah.edu/uni/programs/safe-ut-smartphone-app>) to their smartphones. The SafeUT application is a 24/7 statewide crisis text and tip service that provides real-time crisis intervention to students through texting and a confidential tip program that can help anyone with emotional crises, bullying, relationship problems, mental health, or suicide related issues.

Chemistry 1010

Introduction to Chemistry

Instructor	Prof. Mark Noirot, marknoirot@usu.edu; phone 435-678-8193
Credit	3
Prerequisites	none

Required Text+ *Basic Chemistry*, S.S. Zumdahl, D.J. DeCoste, Eighth edition, 2015, Brooks/Cole, Cengage Learning; ISBN: 13-978-1-285-45314-9

Course Objectives

- To understand the basic elements of the atomic model used to describe matter.
- To use the basic quantitative tools of chemistry and understand the language of chemistry.
- To apply chemical models to understand material behavior and the nature of materials.
- To understand basic chemical reactivity, chemical energy, thermal energy, and potential energy.
- To explore the application of chemical science to everyday life.

Description

This introductory chemistry course explores the nature of chemical matter and how that can be understood in terms of the atomic model for chemistry. The nature of chemicals in gas, liquid, and solid forms will be presented. The quantitative aspects of science and chemistry are explored. The basics of chemical reactivity, balancing equations, conservation of mass, conservation of energy, and acid base chemistry will be covered.

The course follows the outline of the textbook. Material from Chapters 1 through 12 is included in this 1 semester course.

Assessment: Exams, Quizzes, Projects

Grades will be determined by scores on 4 exams, online homework, and possible quizzes. Exams will be weighted approximately 65%, homework approximately 35%. These values may be changed by additional quizzes and curves applied to exam scores. Details will be presented in Canvas and are subject to change every semester.

Letter Grades will be assigned based on an adjusted curve with values determined by the official USU grade system.

Exams should not be missed and can be made up only at the instructor's discretion. Quizzes cannot be made-up. Late homework will sustain a 15% penalty.

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Homework / Problems

Reading assignments are posted for each chapter covered from the textbook. Recommended homework problems are also identified in a non-graded assignment.

Video content is also identified and presented in CANVAS through the Media Gallery.

























Homework Quizzes

Additional quizzes may be assigned in CANVAS. There may also be practice quizzes available in either tool. Practice assignments will NOT BE INCLUDED IN FINAL SCORES.





Course Management

The USU Instructure CANVAS system will be used as the primary course management tool. Students must check CANVAS frequently for updates, changes to dates, locations, and assignments. In addition, OWLv2 will be used to manage an

Course Summary:

Date	Details	Due
Fri Sep 3, 2021	 CH1 content videos (https://usu.instructure.com/courses/676440/assignments/3414760)	due by 11:59pm
	 CH2 content videos (https://usu.instructure.com/courses/676440/assignments/3414761)	due by 11:59pm
	 CHEM 1010 Quiz CH2 (https://usu.instructure.com/courses/676440/assignments/3414751)	due by 11:59pm
Fri Sep 10, 2021	 Read CH1 (https://usu.instructure.com/courses/676440/assignments/3414773)	due by 11:59pm
	 Read CH2 (https://usu.instructure.com/courses/676440/assignments/3414777)	due by 11:59pm
	 Science Conceptions (https://usu.instructure.com/courses/676440/assignments/3414753)	due by 11:59pm
	 CHEM 1010 Quiz CH3 (https://usu.instructure.com/courses/676440/assignments/3414746)	due by 11:59pm
Fri Sep 17, 2021	 Read CH3 (https://usu.instructure.com/courses/676440/assignments/3414778)	due by 11:59pm
Tue Sep 21, 2021	 Practice Quiz (to verify Proctorio) (Remotely Proctored) (https://usu.instructure.com/courses/676440/assignments/3414752)	due by 11:59pm
Thu Sep 23, 2021	 CHEM 1010 Exam 1 CH 1, 2, 3 p (Remotely Proctored) (https://usu.instructure.com/courses/676440/assignments/3414745)	due by 8pm
	 CH3 content videos (https://usu.instructure.com/courses/676440/assignments/3414762)	due by 11:59pm
Fri Sep 24, 2021	 CHEM 1010 Quiz CH4 (https://usu.instructure.com/courses/676440/assignments/3414757)	due by 11:59pm
	 Read CH4 (https://usu.instructure.com/courses/676440/assignments/3414779)	due by 11:59pm
Fri Oct 1, 2021	 Read CH5 (https://usu.instructure.com/courses/676440/assignments/3414780)	due by 11:59pm
	 CHEM 1010 Quiz CH5 (https://usu.instructure.com/courses/676440/assignments/3414748)	due by 11:59pm
Fri Oct 8, 2021	 Read CH6 (https://usu.instructure.com/courses/676440/assignments/3414781)	due by 11:59pm
Sat Oct 9, 2021	 Unit 1 mastery (https://usu.instructure.com/courses/676440/assignments/3504936)	due by 11:59pm
Fri Oct 15, 2021	 CH4 content videos (https://usu.instructure.com/courses/676440/assignments/3414763)	due by 11:59pm
	 CH5 content videos (https://usu.instructure.com/courses/676440/assignments/3414764)	due by 11:59pm
Fri Oct 22, 2021	 CHEM 1010 Quiz CH6 (https://usu.instructure.com/courses/676440/assignments/3414750)	due by 11:59pm
Thu Oct 28, 2021	 CHEM 1010 Exam 2 CH 4, 5, 6 (Remotely Proctored) (https://usu.instructure.com/courses/676440/assignments/3414742)	due by 11:59pm
Fri Oct 29, 2021	 CH6 content videos (https://usu.instructure.com/courses/676440/assignments/3414765)	due by 11:59pm
Mon Nov 1, 2021	 Read CH7 (https://usu.instructure.com/courses/676440/assignments/3414782)	due by 11:59pm
Fri Nov 5, 2021	 CHEM 1010 Quiz CH7 (https://usu.instructure.com/courses/676440/assignments/3414747)	due by 11:59pm

Date	Details	Due
	CH7 content videos (https://usu.instructure.com/courses/676440/assignments/3414766) <input type="text" value="Syllabus Navigation"/>	due by 11:59pm
Fri Nov 12, 2021	CHEM 1010 Quiz CH8 (https://usu.instructure.com/courses/676440/assignments/3414749) Read CH8 (https://usu.instructure.com/courses/676440/assignments/3414783)	due by 11:59pm due by 11:59pm
Fri Nov 19, 2021	CHEM 1010 Quiz CH9 (https://usu.instructure.com/courses/676440/assignments/3414744) Read CH9 (https://usu.instructure.com/courses/676440/assignments/3414784)	due by 11:59pm due by 11:59pm
Mon Nov 22, 2021	CH8 Content videos (https://usu.instructure.com/courses/676440/assignments/3414767)	due by 11:59pm
Fri Nov 26, 2021	CH9 Lecture Videos (https://usu.instructure.com/courses/676440/assignments/3414768)	due by 11:59pm
Mon Nov 29, 2021	Read CH10 (https://usu.instructure.com/courses/676440/assignments/3414774)	due by 11:59pm
Tue Nov 30, 2021	CHEM 1010 Exam 3b CH 7, 8, 9 (Remotely Proctored) (https://usu.instructure.com/courses/676440/assignments/3414743) Read CH11 (https://usu.instructure.com/courses/676440/assignments/3414775)	due by 11:59pm due by 11:59pm
Fri Dec 3, 2021	CHEM 1010 Quiz CH10 (https://usu.instructure.com/courses/676440/assignments/3414741) CHEM 1010 Quiz CH11 (https://usu.instructure.com/courses/676440/assignments/3414755) Read CH12 (https://usu.instructure.com/courses/676440/assignments/3414776)	due by 11:59pm due by 11:59pm due by 11:59pm
Sun Dec 5, 2021	Chapter 10 Lecture Videos (https://usu.instructure.com/courses/676440/assignments/3414769)	due by 11:59pm
Wed Dec 8, 2021	CH11 Lecture Videos (https://usu.instructure.com/courses/676440/assignments/3414768) CH12 Lecture Videos (https://usu.instructure.com/courses/676440/assignments/3414759)	due by 11:59pm due by 11:59pm
Mon Dec 13, 2021	Science Conceptions II (https://usu.instructure.com/courses/676440/assignments/3414754)	due by 11:59pm
Tue Dec 14, 2021	CHEM 1010 Exam 4 (Remotely Proctored) (https://usu.instructure.com/courses/676440/assignments/3414756)	due by 11:59pm
	CH10.2 quiz (https://usu.instructure.com/courses/676440/assignments/3472608) CH11.2 quiz (https://usu.instructure.com/courses/676440/assignments/3472609) CH12.2 quiz (https://usu.instructure.com/courses/676440/assignments/3472610) CH2.2 quiz (https://usu.instructure.com/courses/676440/assignments/3472619) CH3.2 quiz (https://usu.instructure.com/courses/676440/assignments/3472620) CH4.2 quiz (https://usu.instructure.com/courses/676440/assignments/3447793) CH5.2 quiz (https://usu.instructure.com/courses/676440/assignments/3472505) CH6.2 quiz (https://usu.instructure.com/courses/676440/assignments/3472518) CH7.2 quiz (https://usu.instructure.com/courses/676440/assignments/3472564) CH8.2 quiz (https://usu.instructure.com/courses/676440/assignments/3472565) CH9.2 quiz (https://usu.instructure.com/courses/676440/assignments/3472566) CH9.2 quiz (https://usu.instructure.com/courses/676440/assignments/3472607) CHEM 1010 CH12 quiz (https://usu.instructure.com/courses/676440/assignments/3472611) EC survey/balance (https://usu.instructure.com/courses/676440/assignments/3414770) Exam 1.2 (https://usu.instructure.com/courses/676440/assignments/3472613) Exam 2.2 (https://usu.instructure.com/courses/676440/assignments/3472614) Exam 3.2 (https://usu.instructure.com/courses/676440/assignments/3472616)	

Date	Details	Due
	 Exam 4.2 (https://usu.instructure.com/courses/676440/assignments/3472618) <input data-bbox="1298 113 1500 138" type="text" value="Syllabus Navigation"/>	
	 Post-Breadth Physical Sciences (BPS): Criteria 1 (https://usu.instructure.com/courses/676440/assignments/3414771)	
	 Pre-Breadth Physical Sciences (BPS): Criteria 1 (https://usu.instructure.com/courses/676440/assignments/3414772)	
	 Quantitative Answer (https://usu.instructure.com/courses/676440/assignments/3506934)	