

# Course Syllabus

Note that the contents of this syllabus or schedule are subject to change. If changes are necessary, the entire class will be informed, and you will receive a new copy through Canvas.

**Semester: Spring 2024**

**Instructor: Dr. Harinder Singh Bawa**

**Lecture/Lab Email:**

Please contact me

at [harinder.singh.bawa@gmail.com](mailto:harinder.singh.bawa@gmail.com) (Preferred),

[harinder.bawa@reedleycollege.edu](mailto:harinder.bawa@reedleycollege.edu)

**Website:** To access the course <https://scccd.instructure.com>

using your SCCCD username and password.

**Reedley College**

**Class No. 50064**

**Course (Lecture and Lab):**

**Monday: Asynchronous  
Lecture(Online)**

**Wednesday: in-class  
Assignment 7:00pm-8:00pm +  
Lab 8:15 pm-9:50 pm**

**Course Objective:** This course provides an investigation of basic principles of physics and chemistry including matter, physical and chemical properties, energy, motion, light, atomic structure, bonding, solutions and chemical reactions. The interdependence of chemistry and physics will be emphasized. This course is intended for non-science majors.

**Textbook:** There is no required textbook to purchase. We will follow lecture slides for information about the topics. I will provide you with free OpenStax textbooks to learn and read more about the topics. In addition, there will be important lectures and lab materials online on canvas. It is **YOUR RESPONSIBILITY** to review the lecture and lab content when assigned.

**Canvas App:** Canvas is fully functional on many types of smartphones and tablets. Compatible devices include platforms such as iPhone/iPad/iPod Touch, and Android. **However, it is recommended that you do not solely rely on one of these devices to complete your online course work. Access to a computer is still needed for many online activities.** Visit the Mobile section of the [Canvas Guides](#)

[Links to an external site.](#) website for more information. Once you have downloaded the Canvas Mobile App and are prompted to Find My School, search for: [csuconnect.instructure.com](https://csuconnect.instructure.com)

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### **Communication Expectations**

- Identify yourself by your real name. Be mindful of your language, and avoid including personal information, such as phone numbers or addresses, in discussion forums. All communications should be transmitted with the intent to inform, inspire, etc. and not to offend or breach personal privacy.
- Use humor, joking, or sarcasm with caution. We often rely on non-verbal cues such as facial expressions to communicate joking or sarcasm, but these cues are not always clear in an online environment. These cues can be simulated with emoticons to reduce misunderstandings.
- Be Professional, Clear and Respectful. Clear and effective writing translates to clear and effective communication. Writing the way, you would speak is a good rule of thumb, use a positive tone and adhere to the same rules you would follow in face- to-face communications.

### **Learning Environment**

This course is designed using inclass activities, assignments, discussions, and assessments. The course will make use of many common LMS (learning management system) tools, e.g., Canvas. Please be sure to read all the lessons and documents in the course so that you have the necessary information to complete the required activities. If your campus uses a different LMS than Canvas, we recommend you watch the "*Navigating this Course*" Video before getting started.

### **Learner Expectation**

- Ensure you have approximately 10 hours per week to spend on this course
- Review the assignments on the Course Schedule and print it out for easy reference as you complete each
- You are expected to plan your study time around the course schedule and recommended completion
- Check your email account regularly for updated information. Use e-mail for private messages to the instructor and other students. The discussion forum is for public messages.
- If you have questions or confusion about an assignment, act promptly! Check the Question Cafe to see if your concern has been addressed already and post your question there if you don't see an
- We are human and sometimes links or other pages need updating or become inactive.
- Read directions

### **Important dates:**

January 8	(M)	Start of Spring 2024 semester
January 8 - March 8	(M-F)	Short-term Spring 2024 classes, first nine weeks
January 15	(M)	Martin Luther King, Jr. Day observed (no classes held, campus closed)
January 19	(F)	Last day to drop a Spring 2024 full-term class for full refund
January 26	(F)	Last day to register for a Spring 2024 full-term class in person with add authorization
January 26	(F)	Last day to drop a Spring 2024 full-term class to avoid a “W” in person
January 28	(Su)	Last day to drop a Spring 2024 full-term class to avoid a “W” on Self-Service
January 28	(Su)	Last day to add a Spring 2024 full-term class with add authorization on Self-Service
February 16	(F)	Lincoln Day observance (no classes held, campus closed)
February 19	(M)	Washington Day observance (no classes held, campus closed)
March 1	(F)	Deadline to apply for graduation for Spring 2024 completion
March 8	(F)	Last Day to drop a Spring 2024 full-term class (letter grades assigned after this date)
March 11 - May 17	(M-F)	Short-term Spring 2024 classes, second nine weeks
March 25 - March 29	(M-F)	Spring recess (no classes held, campus open Mar 25-28)
March 29	(F)	Good Friday observance (no classes held, campus closed) (classes reconvene Apr 1)
May 13-17	(M-F)	Spring 2024 final exams week
May 17	(F)	Last day to change a Spring 2024 class to/from Pass/No-Pass grading basis
May 17	(F)	End of Spring 2024 semester/commencement

### **Attendance:**

Attendance is mandatory. Attendance credits depend upon your presence and your lecture notes(graded), how much you participate in in-class assignments, in class quizzes and exams in

timely fashion. The more you are late in assignments, the more deduction of the points from attendance. **There is 10% weight given to attendance only.**

**Term-Exams:** There will be two(2) term-exams over the course of the semester. These tests are either multiple choice format or fill-in the blanks. **The exams combine to form 20% of your overall grade.**

**Laboratory:** In this semester, Laboratory experience gives you the chance to test the concepts you learnt in class. You need to finish the lab in class itself and under normal circumstances, you cannot take lab work in your home. If you miss the lab, makeup labs are not given. You are either excused (with proper documentation) or get 0 if unexcused absence. **The labs will contribute 15% of your overall grade.**

**Final Exam:** There will be a final exam for this course that is cumulative with an emphasis on the material at the end of the semester. **The final exam will account for 20% of your overall grade.**

**Presentation Activity:** This has been divided into two parts

1. **Presentation/teaching on whiteboard:**

After each video lecture, you will be asked to prepare notes on the covered concept. On Wednesdays, a selected student will have the opportunity to teach this concept to the class using the whiteboard. The selection will be random, ensuring everyone stays prepared and engaged throughout the week.

This activity serves multiple purposes:

- Reinforcing Understanding: Teaching a concept reinforces your understanding and helps solidify your knowledge.
- Collaborative Learning: It creates a collaborative environment where we learn from each other.
- Developing Skills: It hones your presentation and communication skills, essential in various aspects of life.

Furthermore, participation in these sessions will earn you participation points. These points will reflect your active engagement, preparedness, and the quality of explanation during your presentation.

I encourage you to approach this activity with enthusiasm and diligence. It's a fantastic opportunity for each of you to shine and contribute to our collective learning journey.

2. During the later half of the course each student will prepare a PowerPoint lecture on Physics/chemistry topics in syllabus that demonstrates a concept learned in this course. The activity should use materials that is readily available so that the students can repeat this activity with their school students. The minimum time for the lecture is 20 min and maximum time is 30

min (with 10 min Demo). You need to prepare PowerPoint lecture to explain as if you are explaining to the students of the class. **This activity will account for 20% of your overall grade.** \*Helpful hints: Always start with introduction of yours, then topic you are going to explain, its basic definitions, formula, explanation of the topic, conclusion and in the end, you can relate the topic to its use in activities of our daily life.

**Inclass-Quizzes/worksheets:** We do several inclass worksheets/quizzes in class. They are helpful in understanding concepts as well as your homework. These worksheets are open book(you can use class notes) and will do every wednesday from 7pm-8pm. **They worth 15% of your grades.**

### **Grading Policy:**

To calculate your grade, total all points earned and divide that number by the total points available. Course grades are non-negotiable; because extra credit points, exam curves, and low score replacement are offered the grading scale will not be adjusted; **I DO NOT ROUND UP your grades to the next letter grade.** The final course grade is based on:

<i>Percent Range</i>	<i>Grade</i>
90-100	A
80-89.99	B
70-79.99	C
60-69.99	D
Less than 60	F

I **WILL NOT** give an individual student separate extra credit at the end of the course to increase their percentage grade. I do not mind correcting honest mistakes so do not hesitate to contact me regarding them, but do NOT ask for special treatment. **You earn the grade you receive in this course.**

### **College Policies**

The college has several policies that you will be expected to adhere to in my course. The Policy on Students with Disabilities, the University Honor Code, the Policy on Cheating and Plagiarism, a statement on copyright, and the university computer requirement, portions of which are below, can all be found in the University Catalog (Policies and Regulations) and Class Schedule.

### **ATTENDANCE AND DROP/ADD POLICY**

- Your success in this course requires that you finish the work *on time* for each lecture and lab. Excuses for late submissions will be honored at my discretion. Most announcements will be placed on Canvas but find a “buddy” which can update you about the

announcement if you miss. I will drop students (both enrolled and waitlisted) based on the following policy:

- Student not finishing the first week of assignment and the first lab. If contacted, student not responding via canvas message/by email.

### **Cheating and Plagiarism:**

I DO NOT TOLERATE CHEATING. PERIOD. Most of you are future teachers and if you do not know the basic information in this course, it will affect next generation. The University policy reads, "Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one's grade or obtaining course credit; such acts also include assisting another student to do so. Typically, such acts occur in relation to examinations. However, it is the intent of this definition that the term 'cheating' not be limited to examination situations only, but that it includes any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means. Plagiarism is a specific form of cheating which consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one's own.

### **Subject to Change Statement:**

This syllabus and schedule are subject to change in the event of extenuating circumstances. If you are absent from class, it is **your responsibility** to check on announcements made while you were absent.

**Diversity Statement:** "Respect for Diversity: It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you.

### **Lecture Content (Topics)(Class # is Lecture Slide on Canvas)**

1. Measurement and Fundamental Properties
  1. Fundamentals of measuring length, area, volume and mass
  2. Density of materials
  3. The scientific method
2. Motion, Forces and Energy
  1. Motion of objects as related through the concepts of position, displacement, speed, velocity, and acceleration
  2. Interpretation of distance vs. time and speed vs. time graphs
  3. The relationship between a net force and the motion of an object
  4. Explain how action and reaction forces are related to each other

5. Basic forces in the universe including electrostatic, gravitational, and magnetic
  6. Forms of energy including solar, chemical, magnetic, electric, nuclear, and thermal
  7. The relationship between net force, work, and kinetic energy
  8. Conservation of energy, and how energy is transformed from one form to another
  9. The nature of heat (thermal energy) and heat transfer (conductive, convective, radiant) and their relationship to temperature and temperature measurement
3. Structure and matter
    1. Atomic theory and basic atomic structure including the relationships between sub-atomic particles
    2. Periodic Table of Elements and periodic trends to atomic structure
    3. Characteristics of the atomic, ionic, and molecular classes of matter
    4. Phases of matter (solids, liquids, and gasses) and the connections between the properties using a particle model
    5. Classification of matter-elements, substances, compounds, mixtures
    6. Basic characteristics of solutions, including acids and base, and their relationship to the pH scale
  4. Matter and its Changes
    1. Phases of matter and associated phase changes
    2. Chemical and physical changes, and classifying chemical and physical properties of matter
    3. Basic principles of chemical bonding and chemical activity
    4. Energy changes during chemical reactions
5. Electricity and Magnetism
    1. Electric charge and how charge is transferred from one object to another
    2. Models of electric current, voltage, resistance, and their interrelationships
    3. The construction and operation of simple electrical circuits and the difference between series and parallel combinations of resistors
  6. Waves and Light
    1. Longitudinal and transverse waves
    2. Properties and sound
    3. Doppler effect and interference
    4. Electromagnetic radiation (light), the electromagnetic spectrum and sources of light
    5. Relationship between wavelength (or frequency) and color
    6. Color perception
    7. Reflection and refraction of waves.

**Labs to cover: (Subject to change depends upon the week lecture)**

**Physics**

1. Measurements/units
2. Position, displacement, velocity, and acceleration
3. Forces and Newton's Laws
4. Exploring Gravity
5. Projectile Motion
6. Virtual collisions
7. Electricity and Magnetism
8. Bending of Light
9. Buoyancy (Density and Floating Object)

**Chemistry**

10. Building an atom/Periodic table
11. Analyzing concentration of the solution
12. Energy forms and Specific heat in Calorimetry
13. Physical and chemical change
14. Chemical reactions
15. Radioactivity