

## PHYS 108: \*Physical Science Survey

<b>Location:</b>	Evening
<b>Address:</b>	1001 Rogers Street Columbia, MO 65216
<b>Section:</b>	19FALL2/PHYS/108/AEV
<b>Semester Credit Hours:</b>	3
<b>Class Day(s) and Time(s):</b>	Monday 5:30 PM - 9:30 PM from October 21, 2019 to December 14, 2019

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### Course Information

#### Catalog Description

Examination of the physical world and its basic underlying scientific principles. Cross-listed as PHYS 108.

**Prerequisite:** MATH 106 or higher. G.E.

#### Additional Notes

**Calculator:** Students will need a calculator for this class that is not programmable and is not a smartphone.

**Late work:** Students are allowed to turn in the Paper Homework and the WebAssign Homework late up until the beginning of the class after the assignment was due but will lose 10% of the points. Reading quizzes (except the last) can be turned in late up until one week after the due date but will lose 10% of the points.

### Textbooks

As part of Truition<sup>SM</sup>, students will receive their course materials automatically as described below.

 Shipman. (2016). *An Introduction to Physical Science with access to WebAssign* (14th). Cengage. *eText*

#### Bookstore Information

Visit <https://www.ccis.edu/bookstore.aspx> for details.

#### eText Information

If a course uses an eText, (see textbook information above) the book will be available directly in Desire2Learn (D2L) seven days before the session begins, if registered for courses prior to that date. Upon first login to VitalSource, students should

use their CougarMail email address; alternate email addresses cannot be used. More information about how to use the VitalSource platform, including offline access to eTexts, can be found in D2L.

#### Physical Course Materials Information

Students enrolled in courses that require physical materials will receive these materials automatically at the shipping address on file with Columbia College. Delivery date of physical materials is dependent on registration date and shipping location. Please refer to confirmation emails sent from Columbia College for more details on shipping status.

**Returns:** Students who drop a class are responsible for returning any physical course materials that were shipped. To initiate a return, visit [Ingram Returns](#) to generate a pre-paid return label. Materials from dropped courses must be returned within 30-days of receipt. **Failure to return physical items from a dropped course will result in a charge to the student account for all unreturned items.**

**Note:** Students who opt-out of having their books provided as part of [Tuition<sup>SM</sup>](#) are responsible for purchasing their own course materials.

#### Technology Requirements

##### **THIS IS A TECHNOLOGY-ENRICHED COURSE WHICH COMBINES IN-SEAT INSTRUCTION WITH ONLINE LEARNING.**

Participation in this course will require the basic technology for all classes at Columbia College:

- A computer with reliable internet access
- A web browser
- Acrobat Reader
- Microsoft Office or another word processor such as Open Office

For more information, see [technical requirements](#).

#### Course Learning Outcomes

- Explain the scientific method and the importance of units in scientific measurements.
- Solve problems based on Newton's laws of motion, the three laws of thermodynamics and the kinetic theory of gases.
- Describe the structure of the atom, predict properties of the elements using the periodic table, and predict the results of fission and fusion transformations.
- Identify and name ionic and molecular chemical compounds, balance chemical reactions and solve problems based on reactions.
- Explain the structure of the solar system and explain how that structure gives rise to the solar day, the seasons and the phases of the moon.
- Describe the structure of stars, their classification, and other components of the universe including how the universe was formed.

#### Grading

##### Grading Scale

Grade	Points	Percent
A	900 - 1000	90-100%
B	800 - 899	80-89%
C	700 - 799	70-79%
D	600 - 699	60-69%
F	0 - 599	0-59%

##### Grade Weights

Assignment Category	Points	Percent
Online Learning Activity	150	15%
Exams	500	50%
Quizzes	140	14%

Homework	112	11%
Reading Quizzes	66	7%
Chapters 17 and 18 Worksheet	32	3%
<b>Total</b>	<b>1000</b>	<b>100%</b>

## Schedule of Due Dates

### Week 1

Assignment	Points	Due
WebAssign Homework 1	19	Saturday
Read chapters	--	Before class
Paper Homework #1	16	Sunday

### Week 2

Assignment	Points	Due
WebAssign Homework 2	19	Saturday
Read chapters	--	Before class
Watch required videos	--	Before class
Reading Quizzes	18	Before class
Quiz #1	35	In class
Paper Homework #2	16	Sunday

### Week 3

Assignment	Points	Due
WebAssign Homework 3	18	Saturday
Read chapters	--	Before class
Watch required videos	--	Before class
Reading Quizzes	12	Before class
Quiz #2	35	In class
Paper Homework #3	16	Sunday

### Week 4

Assignment	Points	Due
WebAssign Homework 4	19	Saturday
Read chapters	--	Before class
Watch required videos	--	Before class
Reading Quiz	6	Before class
Exam #1	160	In class
Paper Homework #4	16	Sunday

### Week 5

Assignment	Points	Due
WebAssign Homework 5	19	Saturday
Read chapters	--	Before class
Watch required videos	--	Before class
Reading Quizzes	12	Before class
Quiz #3	35	In class
Paper Homework #5	16	Sunday

### Week 6

Assignment	Points	Due
WebAssign Homework 6	18	Saturday
Read chapters	--	Before class

Assignment	Points	Due
Watch required videos		Before class
Reading Quiz	6	Before class
Exam #2	160	In class
Paper Homework #6	16	Sunday
<b>Week 7</b>		
Assignment	Points	Due
WebAssign Homework 7	18	Saturday
Read chapters	--	Before class
Watch required videos	--	Before class
Reading Quiz	6	Before class
Quiz #4	35	In class
Paper Homework #7	16	Sunday
<b>Week 8</b>		
Assignment	Points	Due
WebAssign Homework 8	20	Friday
Read chapters	--	Before class
Watch required video	--	Before class
Reading Quiz	6	Before class
Exam #3	180	In class
Chapters 17 and 18 Worksheet	32	In class
<b>Total Points: 1000</b>		

## Assignment Overview

### Online Component Expectations

In this course, there are eight (8) WebAssign Homework Assignments which will be completed in the Cengage's WebAssign Courseware. The WebAssign Homework will focus on the following topics:

- Week 1: Significant Figures and Converting Units
- Week 2: Newton's Laws
- Week 3: Heat and the Ideal Gas Law
- Week 4: Nuclear Symbols, Radioactivity, Fission and Fusion
- Week 5: Periodic Table and Naming Compounds
- Week 6: Balancing Equations
- Week 7: Writing Formulas of Ionic and Molecular Compounds
- Week 8: The Solar System

Each assignment will be worth 18 to 20 points. Most of the questions will be multiple choice, numerical, or entering a chemical equation, and will be graded automatically. The last assignment includes a short essay question that the instructor will need to grade manually. The point values will vary depending on the type and difficulty of each question. For many of the questions, students will be able to attempt the question either two or three times, however, they will lose ~10% on each attempt after the first.

### Assignments

#### **Paper Homework**

There will be a homework assignment each week that will be posted in the Contents section on D2L. It will have some questions from the ends of the chapters and some similar questions. Students should answer the homework questions on paper and then scan their answers and upload them into the Dropbox on D2L. The homework is due at 5:00 p.m. on the Sunday before class. The instructor will grade the homework and return it at the beginning of class. Assignments can be completed individually or in groups, but each student must submit his/her own paper online. Homework turned in to the Dropbox after the 5:00 p.m. deadline

on Sunday but before the beginning of class on Monday will lose 10% of the possible points. Late homework will not be accepted after the beginning of class on Monday.

### Reading Quizzes

Reading quizzes are multiple choice, open book quizzes that are designed to assess whether the student has read the material, not necessarily whether s/he can work problems based on the material. The questions for the reading quizzes will be posted in the Contents section on D2L so that students can print them out and find the answers as they are reading the textbook. Students will then need to go to the Quiz section on D2L to actually submit their answers to the questions. The answers to the reading quiz for each chapter are due by 4:30 p.m. on the day that chapter is covered in class. Reading quizzes are automatically graded in D2L. Most reading quizzes can be turned in up to one week late, but students will have to ask the instructor to reset the due date in D2L and will lose 10% of the possible points. The last reading quiz on Chapters 17 and 18 can only be turned in late up until the Wednesday after the last class.

### Chapter 17 and 18 Worksheet

Chapters 17 and 18 are covered in class on the last day, so material from those chapters will not be on the last exam. Instead there is an open-note worksheet on those chapters that will be filled out in class after the material has been covered.

## Examinations

### Exams

Exam 1 is worth 160 points and covers chapters 1-4. Exam 2 is worth 160 points and covers chapters 5, 9, and 10. Exam 3 is worth 180 points and covers chapters 11-13, 16, and a small part of 15. The exams can consist of multiple choice, matching, fill in the blank and problem solving questions. Partial credit is given on problem solving questions. Students are provided with a sheet of equations, constants, and conversions to use on the exam.

### Quizzes

Quizzes are given near the beginning of class except on days when there is an exam. Quizzes have conceptual and problem solving questions covering material from the previous week. Students are provided with a sheet of equations, constants and conversions to use on the quiz.

## Course Outline

Click on each week to view details about the activities scheduled for that week.

### Week 1: Measurement and Motion

#### WebAssign Homework 1

#### Read chapters

Read Chapters 1 and 2

#### Lecture and problem solving on Chapter 1: Measurement and the start of Chapter 2: Motion

#### Paper Homework #1

Paper Homework #1 covers Chapter 1 and the start of Chapter 2 and should be turned in to the Dropbox on D2L by 5:00 p.m. on the Sunday before the 2nd class meeting.

### Week 2: Motion, Force, Work, and Energy

## WebAssign Homework 2

### Read chapters

Read Chapters 2, 3, and 4 before class.

### Watch required videos

Watch required videos on Chapters 3 and 4 before class.

### Reading Quizzes

Take the Reading Quizzes on Chapters 2, 3, and 4 before class in D2L

### Lecture and problem solving on Chapter 2: Motion, Chapter 3: Forces and Motion, and Chapter 4: Work and Energy

### Quiz #1

Quiz #1 covers chapters 1 and 2

### Paper Homework #2

Paper Homework #2 covers Chapters 2, 3, and 4 and should be turned in to the Dropbox on D2L by 5:00 p.m. on the Sunday before the 3rd class meeting.

## Week 3: Temperature, Heat, and Atomic Physics

### WebAssign Homework 3

### Read chapters

Read Chapters 5 and 9 before class

### Watch required videos

Watch required videos on Chapters 5 and 9 before class

### Reading Quizzes

Take the Reading Quizzes on Chapters 5 and 9 in D2L.

### Lecture and problem solving on Chapter 5: Temperature and Heat and the start of Chapter 9: Atomic Physics

### Quiz #2

Quiz #2 covers Chapters 2, 3, and 4

### Paper Homework #3

Paper Homework #3 covers Chapter 5 and the start of Chapter 9 and should be turned in to the Dropbox on D2L by 5:00 p.m. on the Sunday before the 4th class meeting.

## Week 4: Atomic Physics and Nuclear Physics

### WebAssign Homework 4

### Read chapters

Read Chapters 9 and 10 before class.

**Watch required videos**

Watch required videos on Chapters 9 and 10 before class.

**Lecture and problem solving on Chapter 9: Atomic Physics and Chapter 10: Nuclear Physics****Reading Quiz**

Take the Reading Quiz on Chapter 10 in D2L

**Exam #1**

Exam #1 over Chapters 1 - 4 will be given at the beginning of class. Students will be given an equation sheet with any equations, constants, or conversions they need. Students will need to bring a non-programmable calculator for the exam.

**Paper Homework #4**

Paper Homework #4 covers Chapters 9 and 10 and should be turned in to the Dropbox on D2L by 5:00 p.m. on the Sunday before the 5th class meeting.

**Week 5: The Chemical Elements and Chemical Bonding****WebAssign Homework 5****Read chapters**

Read Chapters 11 and 12 before class.

**Watch required videos**

Watch required videos on Chapter 11 before class.

**Reading Quizzes**

Take the Reading Quizzes on Chapters 11 and 12 before class in D2L

**Lecture and problem solving on Chapter 11: The Chemical Elements and the start of Chapter 12: Chemical Bonding****Quiz #3**

Quiz #3 covers Chapters 5, 9, and 10

**Paper Homework #5**

Paper Homework #5 covers Chapter 11 and the start of Chapter 12 and should be turned in to the Dropbox on D2L by 5:00 p.m. on the Sunday before the 6th class meeting.

**Week 6: Chemical Bonding and Reactions****WebAssign Homework 6****Read chapters**

Read Chapters 12 and 13 before class.

**Watch required videos**

Watch required videos on Chapter 13 before class.

**Lecture and problem solving on Chapter 12: Chemical Bonding and the start of Chapter 13: Chemical Reactions****Reading Quiz**

Take the Reading Quiz on Chapter 13 before class in D2L

### **Exam #2**

Exam #2 over Chapters 5, 9, and 10 will be taken at the beginning of class. Students will be given an equation sheet with any equations, constants, or conversions they need. Students will need to bring a non-programmable calculator for the exam.

### **Paper Homework #6**

Paper Homework #6 covers Chapter 12 and the start of Chapter 13 and should be turned in to the Dropbox on D2L by 5:00 p.m. on the Sunday before the 7th class meeting.

## **Week 7: Chemical Reactions and the Solar System**

### **WebAssign Homework 7**

#### **Read chapters**

Read Chapter 13, Chapter 16, and Chapter 15 Section 5 before class.

#### **Watch required videos**

Watch the required videos on Chapters 13 and 16 before class.

#### **Reading Quiz**

Take the Reading Quiz on Chapters 16 and 15 before class in D2L

#### **Lecture and problem solving on Chapter 13: Chemical Reactions, Chapter 16: The Solar System, and some information from Chapter 15: Place and Time**

#### **Quiz #4**

Quiz #4 covers Chapters 11, 12, and 13.

### **Paper Homework #7**

Paper Homework #7 covers Chapters 13 and 16 and should be turned in to the Dropbox on D2L by 5:00 p.m. on the Sunday before the 8th class meeting.

## **Week 8: The Moon and the Universe**

### **WebAssign Homework 8**

#### **Read chapters**

Read Chapters 17 and 18 before class.

#### **Watch required video**

Watch the required video on Chapters 17 and 18 before class.

#### **Reading Quiz**

Take the Reading Quiz on Chapters 17 and 18 before class in D2L.

#### **Lecture and problem solving on Chapter 17: Moons and Chapter 18: The Universe**

### **Exam #3**

Exam #3 covers Chapters 11-13, 16, and part of 15. Students will be given an equation sheet with any equations, constants, or conversions they need. Students will need a non-programmable calculator for the exam.



## Chapters 17 and 18 Worksheet

The Worksheet is open-note. It will be done in class after we cover Chapters 17 and 18 and before taking Exam #3.

### + Additional Resources

Online databases are available at [library.ccis.edu](http://library.ccis.edu). You may access them using your CougarTrack login and password when prompted.

#### Technical Support

If you have problems accessing the course or posting your assignments, contact your instructor, the Columbia College Technology Solutions Center, or the D2L Helpdesk for assistance. If you have technical problems with the VitalSource eText reader, please contact VitalSource. Contact information is also available within the online course environment.

- Columbia College Technology Solutions Center: [CCHelpDesk@ccis.edu](mailto:CCHelpDesk@ccis.edu), 800-231-2391 ex. 4357
- D2L Helpdesk: [helpdesk@d2l.com](mailto:helpdesk@d2l.com), 877-325-7778
- VitalSource: [support@vitalsource.com](mailto:support@vitalsource.com), 1-855-200-4146

#### Online Tutoring

Smarthinking is a free online tutoring service available to all Columbia College students. Smarthinking provides real-time online tutoring and homework help for Math, English, and Writing. Smarthinking also provides access to live tutorials in writing and math, as well as a full range of study resources, including writing manuals, sample problems, and study skills manuals. You can access the service from wherever you have a connection to the Internet. I encourage you to take advantage of this free service provided by the college.

Access Smarthinking through CougarTrack at [Students -> Academics -> Resources](#).

### ! Columbia College Policies and Procedures

The policies set forth in the [Policy Library](#) are the current official versions of College policies and supersede and replace any other existing or conflicting policies covering the same subject matter. For more information on policies applicable to students, see [Student Policies](#). For more information on policies applicable to the entire Columbia College community, see [College-Wide Policies](#).

Students are expected to read and abide by the College policies. Policies of particular interest to students include, but not limited to the following:

- Graduate Grading Policy
- Undergraduate Grading Policy
- Registration Policy and Procedures
- Withdrawal Policy
- Alcohol and Other Drugs Policy
- Family Educational Rights and Privacy Act (FERPA)

#### Additional Policies:

##### Academic Integrity and Plagiarism

Academic integrity is a cumulative process that begins with the first college learning opportunity. Students are responsible for knowing and abiding by the [Academic Integrity Policy and Procedures](#) and may not use ignorance of either as an excuse for academic misconduct. Additionally, all required papers may be submitted for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers may be included in the Turnitin.com reference database for the purpose of detecting plagiarism. This service is subject to the Terms and Conditions of Use posted on the Turnitin.com site.

##### Disability Resources

If you have a disability that requires an accommodation, please speak with the instructor and consult the [Student Accessibility Resources](#) office. Student Accessibility Resources staff will determine appropriate accommodations and will work with your instructor to make sure these are available to you. To find additional information, see our [ADA and Section 504 Policy for Students](#).

#### Notice of Non-Discrimination and Equal Opportunity:

The College has a process through which students, faculty, staff and community members who have experienced or witnessed incidents of discrimination, harassment, or retaliation on the basis of protected status, can report their experiences to a College official. For more information, see our [Non-Discrimination and Equal Opportunity Policy and Complaint Resolution Procedure](#).

#### Title IX and Sexual Misconduct

The College is committed to addressing the issues of discrimination, harassment and sexual misconduct in the educational and workplace landscape and will continue to modify policies, procedures and prevention efforts as needed. For more information, see the College's [Title IX and Sexual Misconduct Policy](#).

#### Course Policies and Procedures:

##### Attendance Policy

Columbia College students are expected to attend all classes and laboratory periods for which they are enrolled.

For classes with an online component, attendance for a week includes submitting any assigned online activity. Assigned activities are scheduled prior to the course commencing. Assigned activity due dates are subject to change based on actual course progression and will be adjusted as necessary. Attendance for the week is based upon the date work is submitted. A class week is defined as the period of time between Monday and Sunday (except for week 8, when the work and the course will end at 11:59 PM Central Time on Saturday.) The course and system deadlines are based on the Central Time Zone.

Students are directly responsible to instructors for class attendance and work missed during an absence for any cause. If absences jeopardize progress in a course, the College reserves the right to drop or withdraw students from classes. For additional information, see the Administrative Withdrawal for Non-Attendance heading in the [Withdrawal Policy](#).

##### CougarMail

All students are provided a CougarMail account when they enroll in classes at Columbia College. You are responsible for monitoring email from that account for important messages from the College and from your instructor.

Students should use email for private messages to the instructor and other students. The class discussions are for public messages so the class members can each see what others have to say about any given topic and respond.

##### Late Assignment Policy

All classes rely on participation and a commitment to your instructor and your classmates to regularly engage in the reading, discussion and writing assignments. You must keep up with the schedule of reading and writing to successfully complete the class.

No late assignments will be accepted without the prior approval of the instructor.

Acceptance of a late assignment is at the discretion of the instructor.

Make-up examinations may be authorized for students who miss regularly-scheduled examinations due to circumstances beyond their control. Make-up examinations must be administered as soon as possible after the regularly scheduled examination period and must be administered in a controlled environment.

##### Student Conduct

All Columbia College students, whether enrolled in a land-based or online course, are responsible for behaving in a manner consistent with Columbia College's [Student Conduct Code](#) and [Acceptable Computing Use Policy](#). Students violating these policies or any other College policy will be referred to the office of Student Affairs and/or the office of Academic Affairs for possible disciplinary action. The Student Code of Conduct, the [Student Behavioral Misconduct Policy and Procedures](#), and the Acceptable Computing Use Policy can be found in the Policy Library at [ccis.edu/policies](http://ccis.edu/policies). The adjunct faculty member maintains the right to manage a positive learning environment all students must adhere to the conventions of online etiquette when enrolled in a course with an online component.