General Physical Science 101 Spring 2016 (1H2 7553)

Instructor: Dr. Robert MacKay (meet you instructor)
Office Phone: 360-992-6086
Mail stop: Clark College CCW, 224
e-mail: rmackay@clark.edu
Office hours: M 9:00AM to 9:50 AM and 12:00 to 1:50 PM (CCW 225 L)
T 9:00AM to 9:50 AM and 1:15 to 2:15 (CCW 225L);
Th 1:15 to 2:15 PM (CCW 225 L)

Office: at CCW 225L (see aerial view of building).

Course Web Page: http://www.atmosedu.com/PHSC101/

Welcome to Physical Science 101, Introduction to Physical Science. This five credit lab science course is intended as a general science distribution course for non-science majors and has been specifically designed for student success. If at any time you have any questions send me an e-mail or post a question on the Canvas discussion forum "general questions about the class". I am here to help guide you through your learning process. Although we will use Canvas for quizzes, and uploading assignments, most resources are available through our class website at the link above.

This is a hybrid course: we will meet for lab weekly for 2 hours on Tuesday, From 10:00 to 11:50 AM in CCW 002 (Clark College at WSUV campus. (see aerial view of building; our lab room is on the lower floor in the south wing)

Course description How the world around us behaves depends on the nature of matter and energy. Physical laws are presented throughout the course that describe the interaction of matter and energy. These laws are used to help explain experiences from daily life. For the non-science major, with little or no science background.

Required Materials. Text Book: Conceptual Physics by Paul Hewitt 12th or 11th edition. An electronic version is available.
A calculator that adds, multiplies, and divides
Access to MS Word , Excel, and PowerPoint
or open office suite (free) [http://download.openoffice.org/]

When submitting written work save your files in MS Word [.doc] format (or .docx) or .pdf format, no other formats are acceptable. Open Office allows you to save in both of these formats. Also try to name your files without any spaces. Example *ThisFile.doc* as opposed to *This file.doc*.

Mathematics Requirements: Students should be able to add, multiply, and divide. During the first two weeks we will be reviewing graphs, learning how to use excel for scientific purposes, and learning some basic algebra skills. Some of the material seems kind of "Mathy" but please do not let it frighten you. I do understand that many in the class have Math anxiety and I have gauged activities accordingly. Much of your grade for the course will be from written assignments, presentations, and other activities, but I do want to expose you to some useful ideas, some math related, throughout the term. Please ask questions when you feel stumped. Posting questions on the discussion board is a great communication venue, as some of your fellow classmates may have some good ideas.

Assessment:

- 3- Exams: 21%
- Final 14 %
- Term Project (6 %)
- Online quizzes (10 %)
- Labs (14 %)
- Discussions (7%)
- All other assignments combined (28 %)

A (100-93%) A- 93-90%	B+ 90-87% B 87-83% B- 83-80 %	C+ 80-77% C 77-70%
D+ 70-67% D 67-63% D- 63-60%	F less than 60%	

Exams: The readings, homework, and online quizzes are meant to prepare you for exams. The idea is to go back over these things to solidify your knowledge and understanding. Exam study guides include sample exam questions and should be studied. Each student will take a unique online exam taken randomly from a large question pool related to reading, homework, online quizzes, and sample study questions. Exams are available for 142 hrs (Friday 1AM through Wednesday 11PM) at the end of the 3rd , 6th , and 8th weeks. See tentative schedule below.

Term Project: see http://www.atmosedu.com/PHSC101/project.html for details.

Online quizzes Online reading quizzes will be included on Canvas each week. Although the online quizzes are only 10 % of your overall grade the reading quizzes will help you with other aspects of the course including

exams. Some exam questions will be directly from the reading quizzes. Please feel free to work with others in the class on these online quizzes. The purpose of these is to provide students with a self assessment of their understanding of the key ideas, concepts, and interesting facts presented in the assigned reading. Each online quiz is available for credit for 1 week and must be completed by the due date for that week's assignments for full credit.

Lab session for this course meets Tuesday 10:00 PM to 11:50PM in CCW 002 (Clark building at WSUV). All other course material will be completed online. See http://www.atmosedu.com/PHSC101/Labs.html for a tentative lab schedule and for details related to lab policies.

Discussion Board Postings:

There will be 10 weekly discussion forums throughout the term based on a specific question or topic. These forums will be available for a one week period. For **full credit** on the discussion portion of the course, one **must post an original posting** to each weekly topic **and one meaningful reply** to a post from another student. Top quality discussion postings should have reference to data, or diagrams whenever possible and cite references for any factual information, graphs, or images. Late discussion posts are not accepted.

All Other Assignments: Homework will often be presented to you as an MS word document that you can edit by adding your answers and then submitting (upload) via Canvas. Occasionally you will be asked to draw your own figure. It is okay to draw a nice figure by hand and then either scan it or take a digital photo to electronically insert into and MS Word Document or other presentation document. I like to use a paint program to process the image a little before pasting it into a document as this can make the total document size much more manageable. When submitting written work save your files in MS Word .doc format (or docx). Also try to name you files without any spaces. Example *ThisFile.doc* as opposed to *This file.doc*. **Homework is typically due by Tuesday evening at 11:55 PM the week following the assignment.**

Tentative Schedule

Week #	Chapter/Topic	Lab
1	1,2, &3 Intro to Motion	Motion
2	3 &4 Motion ;Forces	Newton's 2nd Law
3	4 & 5 Forces	EnergyLab
Exam #1	Available Fri Apr 22 – Wed Apr 27.	
4	7 Energy	Projectile Motion
5	11; 19: Atoms; Oscillations and waves	Simple Pendulum
6	20 & 21 Sound and Music	Vibrating strings
Exam #2	Available Friday May 13 -Wed May 18	
7	22 and 23 electricity and simple circuits	Electricity Lab
8	24, 25 magnetism and Faraday's law Selected topics from 26 Electromagnetic waves	Magnetism
Exam #3	Available Fri May 27-Wed June 1	
9	Selected topics from 29, 31, and 32 Light waves & Quantum Theory	Wave optics
10	35. Relativity	Presentations week 10 meeting **Tuesday June 7**
Final	Final Exam Available Wednesday June 8 through Wednesday June 15	

See Schedule for links to weekly activities and homework

Overall learning objectives:

- Students will learn physical laws, facts, and concepts related to physics and how these relate to our everyday experiences.
- Students will be introduced to the methods of science: Understand how data acquisition and observations, data visualization, pattern recognition, analysis and modeling contribute to the facts, concepts and theories related to our physical world – the effective application of scientific methodology.
- Students will learn about the nature of science and learn how to distinguish between science and pseudoscience in claims about the natural world.
- Students will develop their ability to distinguish between essential information and extraneous information when analyzing a problem.

Class Policies

Each student is expected to be courteous to others and observe the rules and regulations of the college at all times.

Attendance Attendance and punctuality are essential for success in this class as well as being a lifelong learning skill. Each student is expected to attend lab sessions on a regular basis and to be on time. If you do miss our weekly lab session it is your responsibility to obtain all assignments and/or handouts. In addition, it is your responsibility to make sure that you learn the material covered in class. No makeup points will be given for these assignments so attendance is important. Students showing up late to lab will lose 1 pt from their lab score for each four minutes late. For example, if a student is 16 minutes late to lab then their lab score will be reduced by 4 points. If circumstances prohibit a student from arriving on time the student should plan on doing a make-up extra credit assignment.

Class Participation Each student is expected do all class activities. The course is designed to provide scaffolding early in the quarter to build skills and knowledge needed later in the quarter. The exams will typically be based on topics that are included in readings, online videos, Powerpoint summaries, online quizzes, and labs. The Clark College faculty and administration agree that for every one hour in class students should be spending 2 to 3 hours outside of class working on learning activities (reading, writing, homework). With this in mind, expect to spend approximately 12 to 15 hours a week on the course (120 to 150 hours for 10 week course) if you are aiming for an A grade. Don't fall behind, as it is very difficult to catch up.

It is important to maintain a safe learning environment by showing unconditional respect for others. One must be particularly careful when communicating electronically as often the written word can be perceived differently than intended. This is demonstrated by being respectful of others and their opinions, taking one another seriously, and allowing humor to be a part of the class. Entering into class discussions and asking questions is important but try to be extra courteous to others and their opinions.

Make-up Policy To assess student understanding of reading, ideas presented in class, and laboratory activities periodic quizzes and exams will be given. If a student does miss one exam they will be given a grade based

on 80 % of the average of the other exam scores (including the final) for the missed exam. If a student misses the final but has completed all 3 exams then they will be given a grade based on 80 % of their average exam scores. Exams are available for six days so all students will have plenty of time to study for and complete each exam. No other accommodation will be given for missed exams.

Late homework/online quizzes: Late homework or online quizzes will be accepted with a 10 % penalty for up to 24 hours late, 20% penalty for 24 to 48 hours late, and 50% penalty for more than 48 hours late. Homework will not be considered late if it is submitted via Canvas prior to 11:55 PM on the due date. Homework will not be accepted after it has been graded and returned to the rest of the class. The **extra credit** option discussed below allows you to "make-up" missed assignment points. Online quizzes will not be available after the Saturday following their due date.

Withdrawals The withdrawal policy is published in the Clark College schedule of day & evening classes Change of registration and withdrawals. Please communicate with the instructor before withdrawing from the course as this action may not be necessary**.** * A class officially dropped before the tenth day of instruction will not be entered on your transcript. * After the tenth day and through the seventh week of the quarter, classes formally dropped will be posted to your transcript with a withdrawal grade of "W". * No withdrawals will be accepted after Friday of the seventh week of the quarter. **Withdrawal Appeals** Students unable to withdraw by the end of the seventh week of the quarter due to extenuating circumstances should contact the Dean's Office by the end of the last scheduled class day.

Lab attendance Any student missing more than 2 labs will receive an incomplete for the course (provided a C or better has been earned for all work in the course). Laboratory exercises are assigned weekly. **Each lab activity missed by the student may reduce their overall course grade by up to 2 %.**

Safety is of utmost importance at all times. Since the laboratory environment can present unusual safety hazards the Science division has placed special emphasis on laboratory safety. Please be extra careful while in the laboratory and help us maintain safety campus wide by reporting any potentially hazardous situations immediately to the instructor.

Academic Honesty is required at all times. Honesty is essential at all times during this class. Signing in for someone who is not in class, using homework from a previous term, or plagiarism are examples of dishonest conduct and are grounds for failing this course. Copyright laws, plagiarism rules shall be observed at all times. Plagiarism is representing another's work as your own, or recycling your work and representing earlier work as new work.

Citizenship One of the Clark College campus abilities is **Effective Citizenship**. Always be courteous to yourself, other students, and the instructor. Respect the rights of others to have feelings and opinions that may be different than your own. All students are expect to follow the Clark College Code of Student conduct.

Extra Credit throughout this course students will be given extra credit opportunities which can increase their overall grade by up to **5** percentage points. If a student is interested in developing their own extra credit activity/research project related to a particular aspect of the physical sciences please talk with your instructor first. Written summaries of papers, essays or books related to science issues of particular interest to you are typically worth up to 1 % of your overall grade each. These topics must be approved by the instructor. See Paper Summary for guidelines. Students may also submit one YouTube video summary related to a class topic of their choice for up to 0.6 % extra credit (~ 6 pts). See YouTubeVideo Summary for more details. **All extra credit must be turned in by 11:55 PM on the first day of finals week (Tuesday June 14). Extra credit will not be considered after this date.**

ADA Accommodations: If you have emergency medical information which should be shared; or if you require assistance in case the building should be evacuated; please make an appointment to see me as soon as possible during the office hours indicated in this syllabus. Any student with a disability who may require accommodation in order to fully participate in this class should contact the Disability Support Services Office at (360) 992-2314 or (360) 991-0901 (VP) or stop by GHL 137. For further information see: (http://www.clark.edu/student_services/disability_support.php)

Non-discrimination Policy: Clark College affirms a commitment to freedom from discrimination for all members of the college community. The college expressly prohibits discrimination against any person on the

basis of: Race, color, national origin, disabled veteran status, sex, sexual orientation, age, gender identity, creed, gender expression, Vietnam-era veteran status, religion, marital status, and presence of physical, sensory or mental disability. The responsibility for, and the protection of, this commitment extends to students, faculty, administration, staff, contractors, and those who develop or participate in college programs. It encompasses every aspect of employment and every student and community activity.

Important College-Wide Student Information: Visit www.clark.edu/cc/syllabi for important college-wide student information.