Harry S Truman College
One of the City Colleges of Chicago

Physical Science 111 JK

Fall 2013

Credit Hours: 4 units **Contact Hours:** 5

Class Meeting Times: TuTh 1:00 – 3:20 pm; Room: 3833, main building

INSTRUCTOR: Dr. Kai Cai

E-MAIL: kcai@ccc.edu **PHONE:** 773-907-4347

OFFICE: Main building 3834

OFFICE HOURS: Mon & Wed 4:30 – 5:35pm, Tue 3:30 - 5:00 pm, Thu 3:30 – 5:30pm, and by appointment via email

COURSE WEBSITE: ccc.blackboard.com

Course Description: Introduction to the scientific method, geology, meteorology, and astronomy. Writing assignments, as appropriate to the discipline, are part of the course. 3 lecture hours and 2 lab hours per week.

Prerequisites: Placement test, eligibility for English 101 (or English 100 with a grade of C or better) and Math 099 or higher, or Consent of Department Chairperson.

Required Texts and Materials:

Textbook: Earth Science (plus MasteringGeology) by Tarbuck, Lutgens & Tasa, 13th Edition, Pearson Prentice Hall, 2011. ISBN 13: 978-0-321-76727-1
Associated website: http://www.pearsonhighered.com/mygeoscienceplace/

Other materials:
A computer with internet access is needed to check course Blackboard site and finish assignments on www.masteringgeology.com. Students without home internet access may use free WiFi and computers with internet access at Truman, other CCC campuses and all Chicago Public Libraries. A scientific calculator and a notebook are also needed.

Course Objectives: The mission of this course is to provide the general education student with a background in the areas of geology, meteorology, and astronomy.

Student Learning Outcomes: Upon successful completion of this course, students will be able to:

In Geology:

- Differentiate between minerals and rocks and identify many of the common rocks.
- Classify types of rocks and draw the rock cycle.
- List causative agents and products of various types of erosion.
- Describe the causes and results of diastrophism.
- Classify earthquake waves, faults and types of unconformities.
- Use the laws of geology to determine the relative age of rock structure.
- Describe the gross structure of the Earth, i.e., crust, mantle, core.
- Sort and identify a mixture of minerals according to their physical properties
- Identify geological land forms and describe their origin.
- Relate diastrophism and land forms to tectonic plate motion.

In Meteorology:

- Describe the structure and composition of the atmosphere.
- Describe atmospheric circulation patterns.
- Read simple weather maps and identify fronts, air masses and wind direction.
- Describe the movement of air about high and low pressure centers.
- Use principles of air mass and frontal movement to predict weather in various parts of the U.S. using maps and weather satellite information.

In Astronomy:

- Give evidence of the sphericity, rotation and revolution of the Earth.
- Use latitude and longitude to identify geographical and time zones on Earth.
- Describe the motions of the Earth and the Moon in their orbits
- State and explain the various cosmological models.
- List Kepler's Laws.
- Use scale models as they relate to astronomical systems.
- List types of stars and describe the process of stellar evolution.
- Describe composition, structure, and possible origin of the solar system.
- Describe the structure and evolution of the universe.

Generally:

- Use laboratory equipment to perform experiments and demonstrations.

Method of Instruction: The format will be a combination of direct instruction lecture type, followed by activities like cooperative learning. Special attention is given to laboratory sessions.

Definition / Statement of Active Pursuit of the Course:
District and College attendance policies are listed in the college catalog and the Student Policy Manual:
http://www.ccc.edu/departments/Documents/studentpolicymanual.pdf

At midterm all professors must submit a grade that reflects the performance of each student. Students will be dropped from the class for lack of active participation for any of the following reasons:

1. 50% of lectures
2. 50% of homework
3. 50% of quizzes
4. 50% of tests
5. 70% of laboratory experiments that must be completed.

Successful completion of a laboratory session refers to full participation in a laboratory experiment and the submission of the corresponding lab report.

A student who is not actively participating in any one of the items listed above can be dropped at the mid-term and receive a grade of ADW (Administrative Withdrawal).

NSW (No Show Withdrawal): If a student registered for the course before the start time of the first class period, but 1) did not attend the first 2 classes, or 2) attended only one of the first 3 classes and failed to notify the instructor of his or her intentions to continue the class, the Registrar's Office will remove the student from the course.

Academic integrity: The City Colleges of Chicago is committed to the ideals of truth and honesty. In view of this, students are expected to adhere to high standards of honesty in their academic endeavor. **Plagiarism and cheating of any kind are serious violations of these standards and will result, minimally, in the grade of "F' by the instructor.**

Student Conduct: City Colleges of Chicago students are expected to conduct themselves in a manner which is considerate of the rights of others and which will not impair the educational mission of the College. **Misconduct for which**

students are subject to College Discipline (e.g. expulsion) may include the following: (1) all forms of dishonesty such as stealing, forgery, (2) obstruction or disruption of teaching, research, administration, disciplinary proceeding, (3) physical or verbal abuse, threats, intimidation, harassment, and/or other conduct that threatens or endangers the health or safety of any person, and (4) carrying or possession of weapons, ammunition or other explosives.

Classroom Etiquette:

- Please turn off or set to vibrate your cell phones.
- No food allowed in the classroom.
- To avoid disruptions, students are expected to arrive on time and to remain in class for the duration. If you are late, sit near the door quietly and come to the podium only during the break.
- Respect others regardless of gender, religion, and ethnicity.
- Clean the desk after each lab and return the apparatus to the appropriate locations.

Grading:

The students will be evaluated according to the following weighted formula:

4 Exams (best three out of four + the exit exam): 40%
Lab experiments and activities: 20%
Homework: 15%
Quizzes: 10%
Class activities: reading assignments, in-class exercises, group work, presentations, attendance, etc. 15%

Total = 100% (Note: the percentages are subject to small adjustments)

Your final grade will be computed according to the following scale:

86 % ≤ A ≤ 100%
76 % ≤ B < 86 %
65 % ≤ C ≤ 75 %
55 % ≤ D < 65 %
F < 55%

Note: The exit test will be given in two parts along with Exam 2 and the Final Exam. If a student falls below 40% on the exit test then the student will get a final grade of D or below.

Lectures:
As you can see from the schedule on page 8 the pace of the lectures will be very fast so it is important that you attend all lectures. Some lectures may include extra materials which may appear in exams. Students are expected to read the assigned/relevant topics on the textbook *before* each session and take careful notes in the lectures. There may be reading assignments to be completed *before* each class session. While class is in session, Cell phones or similar electric devices should not ring or make noise anytime. Side conversations are also prohibited. Students who impede the learning of others may be asked to leave for the remainder of the lecture or laboratory and may be subject to disciplinary action.

Absentee Policy: If a student misses for whatever reason a quiz or a laboratory session (only those not requiring lab devices), the student can do a make-up only once on each of these, at the discretion of the instructor. No make-up lab experiments will be provided. Note absence does not excuse a student from completing the course work, like homework. If a student misses a class he or she should do the following: a) check announcements on Blackboard, b) read through the materials covered in the missed class, and c) attempt to do the homework or other applicable assignments. Students are responsible for all missed announcements, assignments and other class work. Any make-up activity will only be arranged after exhausting all the other options (see above). At the end of the semester, attendance record may be counted as a part of the participation points and accounts for no more than 5% of the overall grade. If you wish to withdraw from the class, it is your responsibility to do so officially by Monday, November 18. After the midterm, if you simply quit coming to class without dropping the course, you will receive a grade of F and lose your tuition.

Homework: It is important that you do assigned reading each week, monitor the course Blackboard site for announcements and view the assigned videos. Most homework will be assigned online at www.masteringgeology.com, and due by the following week. The exact due date for each of the homework will be announced in class when assigned and posted on the MasteringGeology website. After one

week pass of the due date, the homework will be accepted only with partial credit. In general, the instructor will not offer any assistance with late homework assignments. A waiver of the late penalty given extenuating circumstances will be considered on a case-by-case basis with appropriate documentation.

Course ID on MasteringGeology: **PHYSCI111F13CAI**

Laboratory: All students are required to perform about 13 lab experiments. Each experiment will be performed by groups of two or three students, but lab reports are required to be submitted individually. Details will be provided for each lab experiment. Students are expected to preview the lab setup (if available) before each lab session. Due to equipment availability issues, NO make-up labs will be given. Lab reports are expected to be submitted on time, with all questions answered clearly and legibly and all pages neatly stapled (not folded or mutilated) together. Points will be deducted for late reports, messy reports, incomplete sentences, and handwriting that is difficult to read. Points will also be deducted for errors in content.

Blackboard Discussions:
Each student is expected to post at least one discussion post on Blackboard by the end of the semester. This will be counted as a part of your class activities (see **Grade breakdown** on page 4).

Exit Exam: to access student learning outcomes in , all students will take an Exit Exam. It contains 50 questions and is administered in two parts: Part I covers materials from Chapters 1 through 11 (geology), and Part II covers materials from Chapters 16 to 24 (meteorology, and astronomy). A student must obtain at least 40% on this Exit Exam in order to receive a passing grade on the course.

The days for quizzes, exams and labs will be announced in class with advance notice.

Last day for student-initiated withdraw: November 18, 2013

Textbook: Earth Science, 13th Edition, Tarbuck & Lutgens

Reading Assignments and Review Questions

Chapter	Reading Assignment	Review Questions
2	Minerals	p30: q1, q3; p34: q1, q3; p39: q2,q3, q4, q5
3	Rocks	p62: q1, q3; p68: q2, q7; p75: q3, q6
4	Weathering, Soil and Mass Wasting (skip p.101)	p84 q1, p86 q1, p88 q2, p103 q3
5	Running water, Ground water	P122: q3, P125: q1,q2, q3, P127:q1,q2, p129 q1, p130 q2, P132:q2, P142:q2,q3
6	Glaciers, Deserts	P160: q1,q2,q3, p162 q2, p166: q1, q2, p171: q1, q4, p174:q1, p177:q1; p180 q1, q3, p184 q1, p189 (Concept Check 6.12) q1, q2, q3
7	Plate Tectonics	p198: q1, q4, p200:q1, P201: q2,q4, p208: q3,q5, P216: q1, p218 q1, q2
8	Earthquakes, Earth's Interior	P231:q1,q2, P232:q2, P234:q2,q3, P239:q1,q2, P240:q2, P244:q3, p248 q2, p252 q4
9	Igneous Activities	P262:q1,q2, q3, P264:q1,q3,q5, P270:q2,q3, p276: q2, P280:q1,q2, P287:q1
10	Crustal Deformation	p300 q1, q3, q4, p303 q2, p308 q1, q2, q3, q4
11	Geologic Time	p330: q1,q3, p336:q1,q3, P339:q1,q3, p342:q1, P343:q1
16	The Atmosphere	P462 q1, p465:q1, q3, p467:q1,q3, p472:q2, q4, p474: q1, q2, p477 q1, p478 (Concept Check 16.7) q1, q2; Concept Check 16.8: q2; p482 q1
17	Moisture, Clouds, and Precipitation	p492: q1, q2, q3, q4, p498:q1,q2,q4, q6, p499 q1, q2, p502 q1, p508: q1, q2, q3, q5, p512:q1, p515: q1,q2, p517 q1
18	Air Pressure, Wind	p527:q1, q2, p528:q1, P531:q1,q3, q4, p535 q1, p539:q1,q2, p541:q2, q3, p543:q1,q2
19	Weather Patterns	P554: q2, q3, q4; p558: q2; Extra credit: p561 q1, p562 q1
21	Earth's Place in the Universe	p616:q2, q3, q4; p622: q4, p625: q3; p627: q1, q2, q3, p628 q6
22	Solar System	p640: q4, q5, p644:q1, p648: q2, q4, p655 q1, p660 (Concept Check 22.6) q1, q2; Concept Check 22.7: q1
23	Light, Telescopes, and the Sun	P668 q2, p669 q4, p671 q2, p674 q1, p682 q1, p683 q1

24	**Beyond our Solar System**	**P691:q1, q3, q4, p693 (Concept Check 24.3):q1, p703:q1, q2, p705(Concept Check 24.7):q2**

<u>Tentative lecture and lab schedule</u> (subject to adjustments):

Week	**Topic**	**Laboratory session**
Week 1 (August 27, 29)	Chapter 1	Lab 1 - Measurements
Week 2 (September 3, 5)	Chapter 2	Lab 2 - Minerals
Week 3 (September 10, 12)	Chapter 3	Lab 3 - Rocks
Week 4 (September 17, 19)	Chapters 4 & 5	VirtualRiver Exercise
Week 5 (September 24, 26)	Chapters 5 & 6	Lab 4 - Geological Models (Part 1)
Week 6 (October 1 & 3)	**Exam 1**: Chap.1-6; Chapter 6	
Week 7 (October 8, 10)	Chapter 7	Lab 5 - Plate Tectonics
Week 8 (October 15, 17)	Chapter 8	Lab 6 – Earthquake
Week 9 (October 22, 24)	Chapter 9	
Week 10 (October 29, 31)	Chapter 10, 11	Lab 7 – Geological Models (Part 2) & Relative Dating
Week 11 (November 5, 7)	**Exam 2 + Exit Exam Part I** Chapter 16	Lab 8 - Atmosphere
Week 12 (November 12, 14)	Chapter 16 - 17	Lab 9 - Map Reading
Week 13 (November 19, 21)	Chapter 18-19	Lab 10 (Weather Measurements) and Lab 11 (Weather maps)
Week 14 (November 26)	**Exam 3:** Chapters 16 to 19	Lab 12 - Earth Seasons
Week 15 (December 3, 5)	Chapter 21 - 22	Lab 13 - Moon Phases
Week 16 (December 10, 12)	Chapter 23 – 24**; Final Exam + Exit Exam Part II**	

The days of the exams may be changed at the discretion of the instructor and will be communicated to the students in class with advance notice.

Academic Support Services:

Numerous academic support services are available to students of Truman College.

Tutoring Center - for students who need help with their assignments: Room 177, McKeon Building, 773-907-4785; http://www.ccc.edu/colleges/truman/departments/Pages/Tutoring.aspx

Writing Center - offers free writing assistance to Truman students enrolled in any credit course. Writing consultants, who are also professors at the college, provide feedback and instruction on any stage of the writing process in any class subject. Students can visit the Center to make half-hour or one-hour appointments with writing consultants for tutoring sessions on essays or other writing assignments, as well as placement test preparation, and writing workshops on various topics. The Writing Center is located in Room 1435 of the main building. Phone: 773-907-4387. http://www.ccc.edu/colleges/truman/departments/Pages/writing-center.aspx

Math Center – Room 1220B, main building. Offers group math workshops etc. 773-907-6832.

GradeFirst: a "web-based student support tool" http://www.ccc.edu/colleges/truman/menu/Pages/Grades-First.aspx

Student Success and Leadership Institute (SSLI) - for students who need various other support services to achieve their educational goals: Room 1435, 773-907-4714.

TRIO Student Support Services: for low-income students, first generation college students, or students with disabilities who need academic support: Room 1435, 773-907-4784, http://www.ccc.edu/colleges/truman/departments/Pages/TRiO-Student-Support-Services.aspx. Registration is required at the start of each semester.

Disability Access Center: the Center verifies needs pursuant to the American Disabilities Act (ADA), determines student academic accommodations, and issues accommodation letters. Registration is required at the start of each semester. Recently moved to Room 1435 in the main building. 773-907-4725. http://www.ccc.edu/colleges/truman/departments/Pages/Disability-Access-Center.aspx

Transfer Center: 773-907-4724; Room 1435, main building.

Please note: the instructor reserves the right to change this syllabus at any time.