



Course Syllabus - *Planet Earth*

**GEOSC 020 (3) GN
Spring 2007**

Penn State Delaware County

Instructor: Dr. Laura A. Guertin (aka "Dr. G")

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Office hours: Mondays and Wednesdays, 8:30AM-10:30AM, 11:30AM-12:20PM

Lecture: 10:30AM – 11:20AM Mondays and Wednesdays in CLASS 101

Lab Sec. 001: 8:30AM – 10:20AM Fridays in CLASS 101

Lab Sec. 002: 10:30AM – 12:20PM Fridays in CLASS 101

Textbook: *Earth: Inside and Out*, edited by E. Mathez, American Museum of Natural History (The New Press, 2001); other readings in ANGEL

What's in store for you... For the majority of you enrolled in GEOSC 020, this is your first true introduction to geology! There are no prerequisites for this course, all you need is an open mind, and you will learn things about the Earth you never knew before. Stay tuned, and find out why our planet is referred to as the "Dynamic Earth!" You will gain insight into the formation and structure of the Earth, inside and out. Learn about geologic hazards, such as volcanoes, earthquakes, and landslides. Get the scoop on plate tectonics, the hydrologic cycle, and groundwater. And yes, we'll be starting our journey with the basic building blocks – minerals and rocks!

Dr. G's philosophy on higher education: **Students are responsible for their own learning!!!****** I am here to help facilitate your science education to the best of my ability, but you must do your part as well. It is up to YOU to come to class, to take notes, to ask questions, to complete assignments and readings by deadlines, to be an active learner! It is up to YOU to take advantage of the education I am providing you. It is your choice to sink or swim in this course. Remember, I can expect 2-3 hours of work outside of class for every hour you spend with me in class.



COURSE GOALS!!!!

I realize that 99.9% of the students that take my geoscience courses will never become professional geologists. This is why I design all my courses around skill-based goals, where you will acquire and/or further develop skills that will be applicable to you no matter what your future career. This is especially true in this GEOSC course.

- **The scientific method and working with data sets:** You will be learning about the methods of science and participating in class activities and assignments that require critical thinking and analyzing science issues with various forms of scientific data.
- **Using technology:** You will be working with Microsoft Office and handheld technology throughout the semester to prepare you for the technology-focused world of employment.

Now for all the necessary, important information....

My expectations of you...

I expect every student to come to every class session on time and ready to go. You should have read the corresponding chapters and readings in ANGEL for each lecture BEFORE coming to class. Be sure to bring something to write with and your calculator to every lecture and lab. I encourage everyone to ask questions and work with your fellow students in lecture. There will not be traditional assignments in this class. Your attendance and participation will strongly impact your performance and thereby your resulting grade.

- **Class Participation and Attendance**

Class participation is required! This course is to be an interactive course, filled with questions, discussions, stories on your favorite Earth experience, etc. There is much we can learn from each other! Although I will be lecturing in this course, what you will be doing during class time is a vitally important aspect of how you will learn in this course – whether you be an “active” participant or just come to class and be a “passive” participant. You will also be working in groups during some lecture periods, which places on you serious responsibility to other students in the class.

ATTENDANCE IS STRONGLY ENCOURAGED, and I will be looking for your presence at every class meeting. I will make exceptions when missing a class for legitimate emergencies when I am **notified AHEAD OF TIME** (such as health, family emergencies, etc.). If you miss lecture for any reason, I will expect you to get in touch with me **THE SAME DAY YOU MISS CLASS** and make up all the work that you missed *before* the next class meeting. You will also be responsible for getting in touch with a fellow student to get the notes for the work that you missed. I do not provide my lecture notes to anyone, since as you will soon see, our class periods are much more discussion-based and focused on the work you complete outside of class.

If you miss a quiz *without* giving me prior notification (meaning, before the start of class that day), you will not be able to take the quiz and will receive a score of zero. If I approve your excuse *prior* to the quiz period, you must then take

a make-up quiz within two days of the original quiz date (so if the quiz is on a Monday, you must take the quiz by 5PM Wednesday).

If you miss a lab period *without giving me prior notification (meaning, before the start of your lab period)*, I will deduct two points from your final average at the end of the semester. You cannot attend a lab section that you are not assigned to – in other words, if you are assigned to the 8:30AM lab session and you oversleep, you cannot attend the 10:30AM session the same day. You also cannot walk into a lab late – if you are not there by the start time of 8:30AM or 10:30AM, you cannot jump in and will have to take a 2-point penalty. Please note that it may not be possible to make up some of the labs, so even if you miss for a legitimate excuse, you still may lose points for not completing the required lab assignment. Students will receive a grade in each lab period on a scale of 0-5 based on participation and how much work is contributed during the data collection and collaborative exercises.

- **Classroom Etiquette**

Let's work together on this one. Please do not have conversations going on with other students while I am lecturing. No passing notes, no reading the newspaper. **If I find that anyone is being too disruptive to too disrespectful to the students or myself, I reserve the right to dismiss you from the classroom.** You will then have to speak to me in my office before I will allow you back into my classroom. **NO FOOD OR BEVERAGES ARE ALLOWED IN CLASS 101 OR ANY COMPUTER ROOMS.** This is a school policy, not just mine. We'll be working with computers and many materials that cannot have any food or drink near them. **DO NOT SIT** in the last three rows of the classroom – there are plenty of seats for everyone in the middle and up front. And **do NOT get up and leave the room while I am lecturing.** We will be having class discussions where I want you to volunteer your interpretation and opinion on certain issues. Be open, be honest, and show respect for the opinions your fellow students have. The class will be much more enjoyable if we show respect for one another!

- **A note on cell phones:** There is no reason a cell phone should be going off in lecture. I can't tell you how disrespectful that is to have a cell phone interrupt me while I am lecturing. Turn your cell phone off before lecture begins. If your cell phone goes off during my lecture, I will dismiss you from the rest of class.
- **A note on laptops:** Laptops are NOT ALLOWED in my classes. I have seen such creative uses of laptops in the classroom – all uses except for taking notes. So you can thank your fellow students for showing me such disrespect that I am instituting this classroom rule. If you want all your notes on your laptop, you'll have to take notes the old-fashioned way and type them in later – a very good exercise to reinforce what you've learned.

In a nutshell, it's all about respect!!! I demand respect in my classroom – respect towards me, respect of students to students, and myself respecting the class. I will not tolerate disrespect in class, and neither should you!

- **ANGEL**

ANGEL will be used much in this course. If you are not familiar or comfortable with ANGEL, please set up an appointment with me ASAP so I can sit down with you and show you how to most effectively use Penn State's course management software. There will be several folders and links for you to access relating to various class discussions and assignments. The most "complex" use of ANGEL is where you will need to know how to download Microsoft files that I post, enter text/data, and then place the file in a dropbox folder I set up. Trust me, you will not survive this course if you don't use ANGEL.

You must access your Penn State email as well. PSU email is the designated form of official communication between Penn State faculty and their students. Do not email me from an outside email account you might have (such as AOL or hotmail) – if you do, I cannot guarantee that I will receive that message. **ALL EMAILS REGARDING THIS COURSE NEED TO BE SENT THROUGH ANGEL IF YOU EXPECT ME TO RESPOND.** I will be making use of email as reminders for deadlines, follow-up to classroom discussion, clarification on assignments, etc. I will not send useless messages – only ones that directly relate to the class and to assist your learning. All emails I send to the entire class at once will be done through the ANGEL email system. Please use professional etiquette when emailing me – don't use all lower-case letters, don't use abbreviations that you might use if you were going to IM someone, and please type your name at the end of the message.

- **Math**

Yes, folks, this is a science course, so there will be some math involved. But the math skills I'm expecting are basic. You should be comfortable with the following: graphing, unit conversions, setting up and solving ratios, and percentages.

- **Palm Pilots**

You will be given Palm Pilot handheld computers to use during most laboratory sessions. You will be assigned a specific Palm Pilot that you will pick up from me at the beginning of lab and return at the end of class. Training will be given on how to use the Palms during the first week of class. Please treat these Palms with respect – do not change any formats, move or delete files, etc. If I find that you have intentionally changed anything on a Palm, you will **IMMEDIATELY** lose the right to use a Palm the remainder of the semester. (***) Keep in mind that most of your labs will be on the Palms... you lose your Palm privileges, you will forfeit the right to participate in all remaining labs and complete any other assignments/projects with them – hence, your grade will be impacted!)

- **Late Assignments**

In a nutshell, you will not be allowed to turn in assignments late during this course. It is your responsibility to stay on top of deadlines. **Do not use “computers” as an excuse for not turning in an assignment on time** (such as the disk ate my paper, I couldn't log in from home, AOL was down, etc.). I will not make exceptions if you wait until 5 minutes before an assignment is due to hand it in.

Unless I tell you otherwise, all assignments will be turned in via an ANGEL drop box or ANGEL quiz. **DO NOT** place paper copies of assignments in my mailbox or under my office door. I will not be responsible for assignments not turned in via ANGEL.

- **Final Exam**

Yes, we will have a REQUIRED cumulative final for this course – but it won't be the traditional type of final. The final is on the last scheduled day of finals (Friday, May 11th) starting at 10:30AM. The exam will be held in CLASS 101 and will be open note/open book.

What you can expect of me...

I will be prepared every day with a full lecture and will start on time. I will keep you updated if there are to be any changes to the syllabus (for example, if the class wants to explore a topic further, I will be flexible!). I will make myself available during and outside of class to answer any question you may have – don't hesitate to ask anything! **I am here to help you *IF* you put in the effort and work yourself!** I will not only teach you “the material” but why we are learning it, the applicability of this course to your everyday lives. After approximately the first month, I should have all of your names memorized and I will recognize you by name during class discussions. I will not give any makeup assignments, for this is not fair to everyone that is ready to participate in class and hand in everything on time. If you have a medical/family emergency and cannot come to class or hand in an assignment, contact me **PRIOR** to see if there is a way to make up for missed work (please note that there are some in-class exercises where it will not be possible to make up the work). Again, I do not provide notes from my lectures if you miss lecture – you will have to get notes from someone else in the class.

In the end...

You must have fun in this course! I give you my word that I will put as much effort and energy into this course as I possibly can, to make this an enjoyable summer session for you. In return, I hope you come to class with a positive attitude and open mind to new ideas and topics!

Note to students with disabilities

Penn State does not discriminate against qualified students with documented disabilities in its educational programs. If you have a disability-related need for modifications in this course, contact Sharon Manco, 610-892-1461, 203A Main. This notification should occur by the end of the first week of the semester.

Grading

Your grade for the semester will be based on quizzes, miscellaneous lab exercises, field projects, and the final exam. Each assignment is assigned a point value, and the total point value for the course is 330 points. The breakdown is as follows:

120 points – Quizzes (6 quizzes worth 20 points each)

105 points – Lab work and exercises (5 online labs worth 10 points each, participation during the 10 in-class labs worth 5 points each, syllabus quiz is worth 5 points)

80 points – Scientific reports (Granite Run Mall project and Cumberland Cemetery project, worth 40 points each)

25 points – Final Exam

The final grades will be assessed at the end of the semester as a % as follows:

A = 96% to 93% (330-307 points); A- = 92.9% to 90% (306-297 points); B+ = 89.9% to 87% (296-288 points); B = 86.9% to 83% (287-274 points); B- = 82.9% to 80% (273-264 points); C+ = 79.9% to 77% (263-255 points); C = 76.9% to 70% (254-231 points); D = 69.9% to 60% (230-198 points); F = 59.9% (197 points) and below

**** Do not expect me to drop any grades, curve any grades, or round up any grades on individual assignments during or on the final average at the end of the semester. Note that the ANGEL Grade Book may round up grades – I do not! I will track all grades in an Excel spreadsheet and calculate final grades from there before I enter grades in eLion. Extra credit is not available in this course.***

Academic Integrity

All students are expected to act with civility, personal integrity; respect other students' dignity, rights and property; and help create and maintain an environment in which all can succeed through the fruits of their own efforts. An environment of academic integrity is requisite to respect for self and others and a civil community.

Academic integrity includes a commitment to not engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty include cheating or copying, plagiarizing, submitting another persons' work as one's own, using Internet sources without citation, fabricating field data or citations, "ghosting" (taking or having another student take an exam), stealing examinations, tampering with the academic work of another student, facilitating other students' acts of academic dishonesty, etc.

Students charged with a breach of academic integrity will receive due process and, if the charge is found valid, academic sanctions may range, depending on the severity of the offense, from F for the assignment to F for the course.

The University's statement on academic integrity, from which the above statement is drawn, is available at: <http://www.psu.edu/dept/oue/aappm/G-9.html>

OK, so **WHAT DOES THIS ALL MEAN... DO NOT EVEN THINK OF CHEATING!!!** Do not copy off of your fellow students, do not share assignments, do not plagiarize (from books, the internet, from yourself, etc.). Be sure that you document all of your sources in the APA style. I will vigorously pursue any suspicions I have of academic integrity violations! If I suspect a violation, I will first have an informal conversation with you to discuss the issue. Then, depending on the outcome of that conversation, I will have another conversation with you that requires us both to sign an academic integrity report form that will be turned in to the campus academic integrity committee. I will determine what I feel is appropriate punishment for your violation of PSU's academic integrity policy. The sanction may be from failing the assignment to failing the course, depending on the severity of the violation. We will be reviewing academic integrity and plagiarism the first week of classes.

To ensure that we do not have any accidental cases of plagiarism, we will be utilizing the Turnitin.com program to review all written assignments this semester. Before you turn in any graded work, you will run your assignments through this online plagiarism detection program. After you receive your report from Turnitin.com, then you can submit your work.

Breakdown of topics covered during each class meeting

- *note that this syllabus is subject to change with prior notification*

►Week 1

W, 01/17: Introduction, layers of the Earth, scientific method, review of academic integrity and the syllabus

ASSIGN: Take-home quiz (in ANGEL) on syllabus and academic integrity (located in the Info you NEED to SUCCEED folder)

ASSIGN: Set up your account in Turnitin.com

READ (ASSIGN READING): Text, p. 1-14

F, 01/19: LAB: Palm Pilot training, lecture on plate tectonics. Lab is worth 5 points.

DUE (11:00PM): Take-home quiz (in ANGEL) on syllabus and academic integrity. (5 points)

READ: Text, p. 20-25

►Week 2

M, 01/22: Origin of the universe to planets

READ: Text, p. 26-39

W, 01/24: Earth's atmosphere, past to present

READ: Text, p. 40-50

F, 01/26: ONLINE LAB (Dr. G at UP): Google Earth - Overview

DUE (11PM in ANGEL): Google Earth exercise (10 points)

► Week 3

M, 01/29: Geologic dating

W, 01/31: The history of the theory of plate tectonics

QUIZ on 01/31: Section One of text and class lectures (20 points)

F, 02/02: LAB: Minerals and mineral identification (5 points)

READ: Text, p. 52-61

► Week 4

M, 02/05: Earthquakes

READ: Text, p. 68-72

W, 02/07: Earthquakes

READ: Text, p. 62-67

F, 02/09: LAB: Igneous rock identification (5 points)

READ: Text, p. 72-78

► Week 5

M, 02/12: Magnetism and paleomagnetism

W, 02/14: Earthquake/tsunami connection

QUIZ on 02/14: Section Two of text and class lectures (20 points)

F, 02/16: LAB: Sedimentary rock identification (5 points)

READ: Text, p. 80-89

► Week 6

M, 02/19: Mountain formation

READ: Text, p. 90-93

W, 02/21: Historic earthquakes and shake maps

READ: Text, p. 94-99

F, 02/23: LAB: Metamorphic rock identification (5 points)

READ: Text, p. 100-103

► Week 7

M, 02/26: Volcanoes

READ: Text, p. 104-114

W, 02/28: Volcanic hazards, introduction to Granite Run Mall project

NOTE: Submit the hypothesis you are testing for the mall project no later than 11PM Thursday, 03/01

F, 03/02: LAB: Granite Run Mall project (Meet in center of Mall at the start of lab, 5 pts)

NOTE: If you are a no-show at the mall, you will automatically receive a zero on this project. The project is due Monday, March 26 in ANGEL

► Week 8

M, 03/05: Volcanic hazards, past and present

QUIZ on 03/05: Section Three of text and class lectures (20 points)

W, 03/07: Rivers

F, 03/09: ONLINE LAB: Google Earth - Rivers

DUE (11PM in ANGEL): Google Earth exercise (10 points)

March 12-16: SPRING BREAK! Observe Planet Earth!

► Week 9

M, 03/19: Rivers/Mass wasting

READ: Text, p. 116-123

NOTE: Your Granite Run Mall project should be submitted to Turnitin.com no later than today

W, 03/21: Mass wasting

F, 03/23: LAB: Topographic Maps (5 points)

READ: Text, p. 124-128

► Week 10

M, 03/26: Fossils and fossilization

READ: Text, p. 128-134

DUE (11PM in ANGEL): Granite Run Mall project (40 points)

W, 03/28: Overview of the Gobi Desert, introduction to Cemetery project

F, 03/30: LAB: Data collection in Cumberland Cemetery (5 points)

► Week 11

M, 04/02: Devil's Tower and Popo

QUIZ on 04/02: Section Four of text and class lectures (20 points)

W, 04/04: Introduction to oceanography

READ: Text, p. 136-145

F, 04/06: ONLINE LAB: Google Earth – Coastal geology

DUE (11PM in ANGEL): Google Earth exercise (10 points)

► Week 12

M, 04/09: El Niño

READ: Text, p. 154-159

W, 04/11: Global warming

READ: Text, p. 160-167

F, 04/13: ONLINE LAB (Dr. G at UP): Google Earth – UNEP and Glacier National Park

DUE (11PM in ANGEL): Google Earth exercise (10 points)

► Week 13

M, 04/16: Ice Ages and ice cores

READ: Text, p. 168-174

W, 04/18: Milankovitch

QUIZ on 04/18: Section Five of text and class lectures (20 points)

F, 04/20: LAB: A gallery walk on climate (5 points)

READ: Text, p. 176-183

► Week 14

M, 04/23: Goldilocks planet

READ: Text, p. 184-189

DUE (11PM in ANGEL): Cumberland Cemetery project (40 points)

W, 04/25: Black smokers

READ: Text, p. 190-195

F, 04/27: ONLINE LAB: Google Earth – Global Natural Resources

DUE (11PM in ANGEL): Google Earth exercise

READ: Text, p. 196-206

► Week 15

M, 04/30: Natural resources and metals

QUIZ on 04/30: Section Six of text and class lectures (20 points)

W, 05/02: Yucca Mountain

F, 05/04: LAB: Current geologic news & events (5 points)

Review for final exam

FINAL EXAM (cumulative) will be held in CLASS 101 on
Friday, May 11th, 10:30AM – 12:20PM

You must be there to take the final! Remember that the final is open note, open book. If you show up late, you do not get any extra time to complete the final. If you do not show up at all, you will receive a score of zero on the final – no excuses allowed! *I will not grant permission to take the final exam early under any circumstances!*

How to Write a Scientific Paper in Dr. G's GEOSC/EARTH Courses

In GEOSC 020 this semester, you will be writing two scientific reports - one for the Granite Run Mall project, and one for Cumberland Cemetery project. Use this as a general guide to prepare your write-ups. Note that you will be provided with the grading outline for each project when the project assignment is given.

Each project is based on your use of the scientific method. For most of your projects, I will be grading the **QUALITY** of your hypothesis. Make sure you put some time and thought into developing a hypothesis. For example, a “bad” hypothesis would be: *streamflow increases down the Mississippi River*. This would be just a modification of what we discuss in class – not very original. Make sure your hypothesis is a testable statement, not in the form of a question. Another “bad” example would be: *does streamflow change in the Mississippi?* For this one, how would you define “change”? Where would the “change” take place? Be sure that your hypothesis is a specific as possible for what you will be testing. Make sure you are only testing one hypothesis, not multiple ones in the same statement: *streamflow increases in the Mississippi, and snowfall is heaviest in Mississippi in December*.

- Your report should be as long as it needs to be in length, typed, double-spaced, and in 12 point Times New Roman font. Number the pages in the upper right-hand corner, beginning with the Introduction as page one. Carefully proofread your paper for spelling and grammatical errors. **Do not use personal pronouns such as “I” or “we.”**
- Start with a **Title Page**. Choose a title that reflects the topic and clearly communicates the investigation (do not use “cute and catchy” titles). Your title page should have the title centered in the center of the page. In the center towards the bottom of the title page, include your name, Penn State University Delaware County, GEOSC 020 – Planet Earth, and the date the paper is due. See the page towards the end of this handout for an example title page.
- Begin the paper with the **Introduction**, and label this section as such. This is where you introduce the specific subject of the experiment. This is where you explain in detail the hypothesis, and how and why it was developed. This is where you reference your map of the field area. Here is where you would also include some background information about the subject you are researching.
- The next section is labeled **Methods**. Here is a step-by-step description on how the investigation was conducted. Where is the field site? How did you get there? What did you do there? What type of data did you record (keep in mind that you do not discuss any of the actual data until the next section!). This section is also where you would include a discussion of any data sets outside the data you collected.

- The next section is labeled **Results**. This is where the actual data collected is presented in text, and/or in a figure, and/or in a table. You should have a paragraph that describes the data but does NOT interpret it.

A Note on Figures, Graphs, and Tables

- Make sure each figure/graph has a caption or label across the bottom, just like you see in your textbook. The caption should be meaningful and relate to the figure. For a table, the table heading goes across the top and should clearly describe the content in the table.
 - All figures/graphs/tables should be numbered in sequential order (Figure 1, Figure 2, etc.), placed in your report in sequential order (do not put Figure 10 before Figure 7), and referred to in sequential order (do not point out data in Figure 4 before introducing Figure 3).
 - Figures/graphs/tables should either be contained on a page within the text of a document or on a separate page. If on a separate page, the figure/graph/table should be the page immediately after the page that first refers to that figure. For example, say Page 1 is, “blah, blah, blah, (Figure 1). Blah, blah, blah (Figure 2). Blah, blah,…” Then Page 2 in the document must be Figure 1, and Page 3 in the document must be Figure 2. Then you continue with your text “blah” on Page 4.
- The next section is the **Discussion**. This is where you actually interpret and discuss the data. In the previous section, the data is “laid out.” Here is the comparison of the data to the original hypothesis. If the hypothesis is supported, clearly show how and state so. If the hypothesis was not supported, include some discussion as to possibly why it was not and suggest alternative hypotheses, and maybe what additional data you would need to collect to continue the investigation. Even if your hypothesis was supported by the data from the field, make recommendations for future studies and how future research can expand on the foundation that you have developed with the experiment.
 - End with a **Conclusion** statement or two. Here is where you make some statement that tries to incorporate all that you have learned from this project. This of this section as the “take-home message,” what you want people to remember the most after reading this report.
 - Include a **Reference** section if you used any materials (such as your text) to supplement your report. Follow the formats that we’ve used all semester (check the Plagiarism folder in ANGEL).

Submit your paper to Turnitin.com. After you receive your originality report, make the suggested modifications. Then place your paper in the ANGEL drop box by the due date and time.

My Meaningful, Original Title That Can Be
in a Bigger Font That Clearly Conveys
What The Paper Is About But is Not Too
Long Like This Title

Your Name
Penn State University Delaware County
GEOSC 020 – Planet Earth
Month X, 2007

General Grading Scheme for Investigations

(*** note that you will be provided the exact grading scheme for each project ahead of time)

The report will not be accepted late under any circumstances. Everyone starts with an average score of “3” for each category. Your score will be adjusted to how complete or incomplete your summary and descriptions are. You will receive a ZERO for the entire assignment if it is not turned in by the deadline, or if there is any bit of plagiarism. I reserve the right to deduct points for errors with figures, figure captions, spelling, errors in APA formatting of references, etc.

Introduction

1 2 3 4 5

- is the background explained so someone that did not participate in this project understands what was done?
- is the hypothesis clearly stated, and how it was developed and why?
- is a map included that clearly lays out the field sites?

Quality of Hypothesis

1 2 3 4 5

- is it original? Challenging? Justified?

Methods

1 2 3 4 5

- are the methods detailed enough so that someone not in the class could go and carry out this same procedure?

Results

1 2 3 4 5

- is the data summarized somehow so it all makes sense and is easy to follow? In other words, is the data presented in some type of table or graph or figure, not just reproduced as the data sheet you used in the in the field?
- are the interpretations left out of this section?

Discussion

1 2 3 4 5

*** *this section counts DOUBLE in the end!* ***

- are the interpretations included in this section?
- are their reasons as to why or why not the hypothesis was supported?
- are alternative hypotheses suggested?
- is a future direction of this project suggested?

Conclusion

1 2 3 4 5

- is the end statement clear?
- is their a concise statement supporting the hypotheses and a memorable take-home message?

Directions

1 2 3 4 5

- did you follow them? Typed? Title page? Double spaced? References?

The scientific lab report is based on a total of 40 points