

**GUIDELINES FOR RESEARCH PAPERS
(TO IMPROVE A POOR GRADE)
(SPRING 2010)**

GENERAL INFORMATION

1. These guidelines must be followed exactly for the paper to be accepted for credit.
2. By “Research Paper” it is meant that the student is to do a search for written information on the topic that is chosen. With the gathering of that information, the student will write a comprehensive paper following the format given below.
3. A student may **NOT** do a paper if he/she:
 - Failed the final exam
 - Failed the mid-term exam and is receiving less than 50% on the total points given in quizzes/homework
 - Did not write an essay for the mid-term AND the final exams
4. The following conditions must be met to have the paper accepted:
 - Before you may sign up for a paper, I must see this printed “Guidelines for Research Papers” with your name on the first page. This is to insure that you have read and accepted the guidelines.
 - Your name and a topic must be recorded on the “sign-up” sheet in my office before work is started on the paper
 - No E-mails concerning the paper will be accepted (you must see me to sign in or to change your topic)
 - The topic may be changed as long as it is recorded on the “sign-up” sheet
 - Filling out the “sign-up” sheet does not commit you to submitting the paper
 - Discuss the topic as stated on the “sign-up” sheet, proper format style, i.e., MLA (Modern Language Association) as outlined below, and proper length as given below
 - Only “hard copy” papers will be accepted. Papers in digital format or submitted by E-mail will not be accepted.
 - If plagiarism of any length is present the paper will not be accepted
5. The paper will replace the grade you received in the mid-term exam or all of your quizzes/homework. You must have completed at least three of the quizzes/homework assignments and both of the exams to obtain credit for the paper.
6. Only one 150 point paper for the mid-term exam OR for all of the quizzes/homework is allowed.
7. In all cases the higher grade will prevail in that the paper will replace the grade of the exam or total quiz score only if it is higher.

DUE DATE

The paper is due one week before the scheduled final exam in your class. It may be turned in anytime that day. For example, if your final exam is on a Tuesday, the paper is due on Tuesday the previous week. If I am not in my office, it may be given to the ADA in office NS-110G. Papers submitted by E-mail or in any digital format will not be accepted.

PAPER TOPICS AND PAPER LENGTH

1. I do not assign the topics of the papers. The student must choose a topic for the paper from any subject that was covered or will be covered in the class for which the student is writing the paper. For example: Astronomy 100 - ET's, Black Holes, Galaxies, Stellar Evolution, the Sun, Galileo, Newton; Astronomy/Geology 120 - The Moon, a Planet, Comets, Asteroids, Greek Astronomers, Kepler, Galileo; Geology 100 - Plate Tectonics, Volcanoes, Earthquakes, Glaciers.
2. The length of the paper must be no less than 10 pages. The 10 pages are only the body of the paper and the abstract. The 10 pages excludes title page, illustrations of any kind, tables and the list of references.

MODIFIED MLA FORMAT OF THE RESEARCH PAPER

General Format

1. Standard size paper: 8.5 by 11 inches
2. Margins: 1 inch top, bottom and sides
3. Font Size and Style: 12 points and Times New Roman
4. Spacing between lines: 1.5 (not double)
5. Page Numbering: each page is numbered on the upper right (excluding Title Page)
6. Body of the Paper: Each section will have a label (see below), the first line of a paragraph will be indented 5 character spaces (default for most word processors), and there will 1.5 lines spacing between paragraphs. The left side of the paragraph is justified or aligned, where as the right side is unjustified or not aligned. Correct grammar and spelling must be used.

Title Page

1. The paper must have a title page (one page) containing these items in the following order: a) Title of the paper, b) Class name, e.g., Astronomy 100, c) Name of the Institution, i.e., Palomar College, d) My name, i.e., Professor Pesavento, e) Meeting time of the class, e.g., 8:00am MW, f) Semester of the class, e.g., Spring 2010, g) Your name.
2. You may use any style and size of font on the Title Page only, as long as the Title Page does not exceed one page.

3. The Title Page does not have a “page number”.

Abstract

1. Page 1 should begin with a single paragraph called an ABSTRACT. It is written after the paper is completed and is a summary of the paper informing the reader of the major aspects of the paper.
2. The sequence of the major aspects of the abstract should be as follows:
 - a. Introduce the topic to be discussed and general purpose of the paper. This should be a summary in one sentence of what the reader will learn about the topic. For example, “Black Holes are exotic objects in our universe that can only be understood and describe by the use of the Laws of Relativity.” or “Galileo made significant contributions to Astronomy and Physics by his use of telescopes and his experimentation of falling objects.” This is a summary of the Introduction.
 - b. The second part of the abstract uses two or three sentences to describe to the reader (if the paper is about an object or phenomena) how scientists developed certain concepts (mathematical formulas, theory, etc.) and how they used these concepts to deal with the phenomena. If the paper is about an individual, these two or three sentences summarize the personal background (family, environment, education, etc.) of the individual and how this enabled him/her to arrive at their contribution to the field. For example, “Einstein’s concept of how mass affects the spacetime continuum was successfully used to explain misunderstood activity in our Universe. This same General Law of Relativity was used to describe the formation and the result of a mass’s complete collapse into a infinitely small object. Given the theory, we were able to predict and observe the effect of a Black Hole on the material outside of the Event Horizon.”
 - c. The third part of the abstract uses one or two sentences to summarize the major results of the study about the object or phenomena or what we have learned. In the case of an individual, his or her major contributions to science are summarized. For example, “Although Black Holes cannot be directly observed; we have observed the distance and movement of material around a Black Hole candidate, which enables us to determine its size and mass.”
 - d. The last part, using only one sentence, is the conclusion of the study or some types of implications of the discoveries about the object or phenomena. For example, “We have found, by observation, that massive Black Holes exist in all large galaxies, including the Milky Way, and that Black Holes from stellar collapses are found in galaxies.” For an individual, this would be a statement about how his/her discoveries were used to understand more about the Universe.

The Body of the Paper

1. The paper is to be separated into labeled sections. The label is placed on the far left and is underlined. The text is started 1.5 space below the label. The label for the next section is 3 (twice the 1.5 spacing) line spaces below the last line of the previous paragraph. It should look like this:

Abstract

_____ Black Holes are

Introduction

There are many exotic objects in the Universe, but the one that captures our imagination are Black Holes. These are

2. All papers must have the Abstract section and the Introduction section. The sections after these two depend on the topic discussed. For example, a Black Hole paper may have sections (after the Introduction) of Failure of Newton's Gravitational Law, Einstein's Law of Relativity, Parts of a Black Hole, Speculation on the Interior Properties of a Black Hole, Properties of the Spacetime above the Event Horizon, Discoveries of Black Holes, Conclusion.

Works Cited or References in the Body of the Paper

1. Do not use footnotes in the paper.
2. If quoting an author, make sure that the statement is brief and does not go on for several sentences.
3. When quoting, making an important point that the author has made or to show validity of a statement made by you in the paper. You must reference that data. This is done by adding the author's last name and the year that the author wrote the book, article, etc, in parentheses, after the statement. It should look like this:

The measurement of the orbital speed of the in-falling material by Hubble Space Telescope spectrum was 45,000 km/sec. (Smith 2001) Further study showed that.....

4. All works cited in the body of the paper must appear at the end of the paper in the Works Cited or References page.

Works Cited or References Page

1. A list of references are placed on a separate page The page is labeled as Works Cited or References. Either label can be used. This page is placed at the end of the paper.
2. The references may be books, part of a book, articles in journals or magazines printed or online databases, and websites.
3. Printed encyclopedias, online encyclopedias, like Wikipedia, are NOT to be used.
4. There must be at least 3 references used if all are books, articles in journals or magazines.

If all references are from the internet, a minimum of 6 references are required. Obviously, if there is a mixture of both types of references, 2 internet references is equal to 1 printed book/article.

5. The list of references are placed in alphabetical order using the Author's last name. If no author then the title of the work is used. (Ignore articles of speech as A, An or The)
5. Use hanging indent format. See examples below.
6. Information required for each type of reference:
 - Books (in this order)
 - a. Name(s) of book's author(s) or editor(s)
 - b. Complete title of book (including subtitle) underlined
 - c. City of book's publication
 - d. Publisher's name
 - e. Year of book's publication
 - f. Edition (only if 2nd ed, or later)
 - g. Volume (if there is one)
 - h. If citing a chapter within a book, the page numbers of the chapter

For Example:

Barlow, Nadine G. Mars: An Introduction to its interior, Surface and Atmosphere. New York. Cambridge University Press. 2008. 102-162.

Printed Journal or Magazine Article

- a. Name(s) of article's author(s)
- b. Title of article in "quotation marks"
- c. Title of journal underlined
- d. Volume number and issue number
- e. Date of article's publication
- f. Page numbers of the article

For Example:

Broderick, Avery E. and Loeb, Abraham. "Portrait of a Black Hole". Scientific American. Volume 301, Number 6. Dec. 2010. 42-49.

Journal and magazine articles acquired using an online database

- a. Name(s) of article's author(s)
- b. Title of article in "quotation marks"
- c. Title of journal underlined
- d. Volume and issue number
- e. Date of article's publication
- f. Page number of the article as originally published in printed journal
- g. Database name underlined
- h. Name of location through which database was accessed, e.g., University of California San Diego

- i. Date accessed
- j. URL (web address)

For Example:

Rhawn, Joseph. "The Quantum Cosmos and Micro-Universe: Black Holes, Gravity, Elementary Particles, and The Destruction and Creation of Matter". Journal of Cosmology. Vol. 4. January 2010. 780-800. Journal of Cosmology. March 25, 2010. <http://journalofcosmology.com/Cosmology5.html>

Websites

- a. Name of author or editor (if given)
- b. Title of web article or web content in "quotation marks"
- c. Title of host website underlined
- d. Date of latest update to web content
- e. Name of sponsoring institution
- f. Date accessed
- g. URL (web address)

For Example:

Bunn, Ted. "Black Holes FAQ". University of California, Berkeley. September 1995. University of California, Berkeley. March 25, 2010. <http://cosmology.berkeley.edu/Education/BHfaq.html>

James Pesavento
 Professor of Astronomy and Geology
 Earth, Space and Aviation Sciences Department
 Palomar College