

ADVANCED SCIENTIFIC RESEARCH
TEXTS: Practical Research: Leedy
Students and Research: Cothron

N. Tippens
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Contact Information	
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PURPOSE: The purpose of this course is to introduce the student to basic research methodology and to assist with the senior research project. During this course all students will write a research plan, conduct original research, and present their findings to their peers.

GRADING POLICY:

15%.....	Literature Review
15%.....	Quizzes and Assignments
10%.....	Mentor Checks
10%.....	Methods
10%.....	Results
10%.....	Discussion
15%.....	PowerPoint Presentation
5%.....	Final Paper
5%.....	Portfolio
5%.....	Final Exam

ACADEMIC INTEGRITY:

Cheating is considered a serious matter. The act of cheating will result in a disciplinary referral. The first incidence does not carry a disciplinary consequence with the administrator, just a conference. In any incidence, the parents of a student who has been involved in cheating will be notified and the student will receive a grade of zero for the test or evaluation period, and a grade of U in conduct.

Violation of the NCSIS Honor Pledge, as defined below, will result in disciplinary probation. The NCSIS Honor Pledge is the following: I certify that any work I have submitted and represented as my own, is my own original work. I have not shared, nor exchanged information or materials with anyone, nor will I do so in the future. Additionally, I will act if I become aware that the Honor Pledge has been compromised.

Unacceptable behaviors include, but are not limited to, the following:

- Copying another student’s work.
- Giving another student access to your work.
- Informing students of content that was present on a test when that student may be taking a test later in the day or a different day.
- Using unauthorized materials, such as website, cheat sheets, cell phones, cliff notes, cameras, that are not specifically approved by the instructor beforehand.
- Providing false information to a teacher or administrator during an inquiry related to academic integrity
- Falsifying official documents such as parent notes
- Plagiarism, which includes the following
- Copying content word-for-word from any source including, but not limited to, a website, a journal, a book, another student, etc.
- Paraphrasing content from any source without giving proper citation of the source
- Making up data or sources that do not exist.

SUPPLIES: 2 inch view white binder, 10 dividers, page protectors, glue stick, colored highlighters

LATE WORK: 30 points are subtracted for all assignments for each calendar day the assignment is late.

Half credit for every assignment lacking your mentor check.

CLASS FOCUS: The major emphasis in the Science Research course is to complete a research project. Since this is Advanced Scientific Research, we will follow a science format for completing your research. Fortunately, this will prepare you for your magnet presentation regardless of your topic. This will set you up for doing very well at a Science Fair or Social Science Fair. You will complete the following components over the course of the semester:

1. **Logbook** – A logbook is a record of everything you do related to your project.
2. **Research Design Proposal**
 - a. one page typed rationale of study
 - b. presentation of proposal
 - c. mind map of study design
 - d. ongoing terms list
 - e. research question(s)
 - f. study justification
3. **Literature Review**
 - a. 10 primary journal articles 1990 or later
 - b. 1 book source 1990 or later
 - c. Paper Format
 - i. Title Page – Study Title, Name, Date, Teacher, Class Period
 - ii. Research Question
 - iii. 10 page background
 - iv. Hypothesis
 - v. Justification – 1 page minimum – relate to current research, international relevance, and how it extends current research
 - vi. Bibliography
4. **Methods**
 - a. Materials and Budget
 - b. Step by step, clear, repeatable methods
 - c. Demo/Present Methods – mock trial of methods
5. **Results**
 - a. All raw data and statistical output
 - b. 3 Trials – minimum of 100 total data points
 - c. Experimental photos
 - d. Processed data tables
 - e. Results of statistical tests
 - f. Graphs relating to data tables
 - g. Paragraphs explaining each type of results and graphs
6. **Discussion**
 - a. 5 page minimum
 - b. Discuss Major Findings

- c. Explain why the outcome occurred and the statistical relevance
 - d. Discuss Problems and Improvements
 - e. Discuss Possible Future Research based on your findings
 - f. Discuss support for the Hypothesis by the data
 - g. Compare to prior research found in the Literature Review
 - h. Conclusion Paragraph
7. **Final Paper**
- a. The final paper will include: Title, Abstract, Lit Review, Materials and Methods, Results, Discussion, Bibliography and Appendix
 - b. Each student will defend his/her final paper in a one-on-one conference
8. **PowerPoint Presentation**
- a. Culmination of your Research Project
 - b. 20 minute presentation
 - c. Includes all sections of the Final Paper
 - d. Question and Answer session with teacher and peers
9. **Portfolio** – Professional documentation of all the steps for your research

Reminder: Bring your logbook, textbook, and calculator to class every day! On any given class day we may be using computers for you to do literature searches for your project. You will lose 10 points on your next logbook check for any day you are using the computers without taking notes in your logbook.

Student Signature _____ Date _____

Parent Signature _____ Date _____