**RES 210 Advanced STEM Research**

**4 credits during senior year, 1 credits summer work;**

**satisfactory performance in RES 110 is prerequisite**

Instructor Contact Information Here

**Course Description:** Continuation of work undertaken in RES 110 with emphasis placed upon the completion of experiments and the communication of results in consultation with mentors. Students will consult with their teachers as necessary. Student research is expected to be presented at a minimum of 2 science fair competitions. A final research paper will be written in APA style and submitted for peer review (National High School Journal of Science). Students are expected to spend at least three hours per week outside of class. Prerequisite(s): satisfactory completion of RES 110. Permission of instructor required. Available for year-long course of study through the Dual Enrollment Program only

**Course Objectives**: By the end of this course, you should be able to:

* Apply critical thinking while conducting experiments
* Apply critical thinking while choosing and using statistics
* Evaluate the results of experiments to draw conclusions
* Write a scientific research paper for peer review (National High School Journal of Science)
* Communicate research outcome visually by creating a scientific poster and orally by presenting the poster at a public symposium
* Maintain a comprehensive portfolio of all research work

**Academic Success Center:** Students are encouraged to use the support offered by the Academic Success Center (ASC) located on the ground floor of the Library. Its *Writing Center* is excellent in supporting your class writing assignments. For the most updated hours of operation, check the ASC website at [http://www.easternct.edu/asc/](http://www.easternct.edu/asc/%22%20%5Ct%20%22_blank)***[.](http://www.easternct.edu/asc/%22%20%5Ct%20%22_blank)***

**Academic Misconduct**: Students are responsible for familiarizing themselves with the University’s numerous policies and procedures contained in the University Catalog and Student Handbook. The Code of Conduct policies and the Policy on Academic Misconduct are of special significance, since cheating, plagiarism, and personal misconduct are strictly prohibited and carry severe penalties. Students should read and understand Eastern's Academic Misconduct Policy, which can be found in the student handbook. https://easternct.makekb.com/entry/307/

**Advice**: Class involves a hefty work load. But it is very manageable if you stay on top of the things and you *do not procrastinate* in completing the various class projects.

**Methods for Assessment of Learning**

***Research Proposal*:** A primary activity for this course is the completion of an APA style research proposal for an independent research project. The proposal includes all the major sections of an APA-style paper, copies of all proposed instruments and copies of all cited reference articles. This submission must include: 1) an electronic copy of your proposal (including title page, Abstract, Introduction, Method, Proposed Analyses, Discussion, and References), 2) all appendices (including your measures, informed consent form, debriefing form, etc.), and 3) copies of all articles cited in your proposal.

***Homework***: Time logs chronicling approximately 8 hours of research every 2 weeks. Annotations of research must be in scientific notebook.

***Biweekly assessments***: Meet with instructor every two weeks to discuss goals and review research (20 per year)

***Exams:*** Mid-term evaluation paper that details analysis and statistics of results with discussions. Final evaluation will be submitting your research for peer review and completing a power point of your research to date and presenting it at a science competition and local science symposium

***Attendance***: Attendance will be taken and is part of your Class Participation grade. Students need to document about 3 hours of work each week for class time. They will also submit reviews of presentations made during class.

***Class Participation*:** You can earn up to 50 points for participation.

* *40-50 points*: Attended almost every class. Student asked and answered questions, submitted all assignments on time, demonstrated knowledge of materials, participated actively in exercises, and attended office hours with regularity.
* *25-39 points*: Attended about two thirds of in-class and online meetings, student asked and answered some questions including chat, demonstrated some knowledge of materials, participated in exercises, and attended a few office hours.
* *0-24 points*: Student attended class intermittently, did not participate by asking and answering questions including chat, and/or did not participate in demonstrating knowledge of materials, did not participate actively in exercises, and did not attend office hours.

Therefore, there are a possible *1000 points* for the course:

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|   | **Total Points**  |
| Final research work  | 150  |
| Homework  | 200  |
| Biweekly assessment  | 300  |
| Midterm  | 150  |
| Final exam  | 150  |
| Class Participation  | 50  |

Grades for this course will be determined as follows:

* A = 93-100%
* A- = 90-92%
* B+ = 87-89%
* B = 83-86%
* B- = 80-82%
* C+ = 77-79%
* C = 73-76%
* C- = 70-72%
* D+ = 67-69%
* D = 60-66%
* F = Below 60%