COURSE INFORMATION
SCIENCE RESEARCH
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Course Descriptions:
CAS 109 - Intermediate Science Research (2 credits, July - August) - Juniors
CAS 110 - Intermediate Methods of Research (4 credits, September - June) - Juniors
CAS 209 - Advanced Science Research (2 credits, July - August) - Seniors
CAS 210 - Advanced Methods of Research (4 credits, September - June) Seniors
*** Please note that CAS 109 and CAS 209 are offered only during the summer.*

A CAS 109 Intermediate Science Research (2 credits)
Students learn research methodology in the natural and social sciences by accessing scientific databases, using online bibliographic search techniques, consulting doctoral-level research scholars, developing hypotheses and performing experiments to test them, and writing research papers and making presentations at scientific symposia. It is expected that the students will have completed many of these activities in the prerequisite high school course. In this course, emphasis is placed on the formulation of hypotheses and initiation of experiments in consultation with mentors. Prerequisite(s): completion of one year of an approved course in science research at the high-school level; permission of the instructor. Offered summer session only.

A CAS 110 Intermediate Methods of Research (4 credits)
Students learn research methodology in the natural and social sciences by accessing scientific databases by using online bibliographic search techniques, consulting doctoral-level research scholars, developing hypotheses and performing experiments to test them, and writing research papers and making presentations at scientific symposia. It is expected that the students will have done many of these activities in the prerequisite high school course, and in this course, emphasis is placed on performing experiments in consultation with mentors. Students are expected to spend at least three hours per week outside of class. Prerequisite(s): completion of one year of an approved course in science research at the high-school level; permission of instructor; available for year-long course of study only.

A CAS 209 Advanced Science Research (2 credits)
Continuation of work undertaken in A CAS 109 or equivalent with emphasis placed upon the completion of experiments in consultation with mentors. Students will consult with their teachers as necessary, but will not meet in a formal classroom period. Prerequisite(s): satisfactory completion of A CAS 109 or completion of two years of an approved science research course at the high school level; permission of instructor; offered summer session only.

A CAS 210 Advanced Methods of Research (4 credits)
Continuation of work undertaken in A CAS 110 or equivalent with emphasis placed upon the communication of results. Students are expected to spend at least three hours per week outside of class. Prerequisite(s): satisfactory completion of A CAS 110 or completion of two years of an approved science research course at the high school level; permission of instructor; students must be enrolled throughout an entire academic year to obtain credit.

A CAS 109 and ACAS 209 Student Requirements (Summer):
If you are registered for ACAS 109 or ACAS 209 (Summer courses, 2 credits each) you are required to:

- Work with, or under the direct guidance of, the mentor for a minimum of 90 hours.
- Document all hours in thorough narrative detail, in your laboratory notebook.
- Confer or meet with your teacher, once or more during the summer, about your progress.
- Meet with your teacher at or near the end of the summer for an assessment session to determine a summer grade.

- It is strongly suggested that all students work with their mentors during their sophomore/junior summer and junior/senior summer.

Withdrawing from a UHS course: If you wish to withdraw from a UHS course you must make this request in writing to uhs@albany.edu. You will need to submit a withdrawal form and receive an email from the UHS office to confirm your withdrawal from the course. Please be aware of the course withdrawal date deadlines.

MATERIALS NEEDED:

- Science Research Folder (virtual portfolio) on Google Drive (Shared with Facilitators)
    - 10 folders
    - Three-inch binder with 10 dividers for portfolio
- A physical laboratory notebook with "carbon" copies or digital documents for note-taking (link to an example of a physical lab notebook).
- Suitable computer for conducting research (Chromebook, laptop, etc.)

The Requirements of this course as stipulated by the Science Research Program at the University of Albany are as follows:

- Become familiar with the Science Research in the High School program website***.*** https://www.albany.edu/uhs/science-research-program
- Check Google Classroom daily for all announcements and assignments.
- Schedule a biweekly meeting with your course facilitators – a minimum of *four* per quarter
- Attend all regularly scheduled classes.
- Participate (at a level appropriate to the present year of course) in the school's annual symposium.
- Commit to 240 or more hours per school year (September to June)--approximately 10 hours per week–for your research work. This includes class time, assessment meetings, and all out-of-class time spent on the research.
- Summer research carries a commitment of a minimum of 90 hours plus assessment time.
- Maintain a laboratory notebook/journal of all research-related work documenting a minimum of 10 hours per 2-week cycle. Documentation in the notebook must be completed regularly throughout each 2-week cycle.
- Maintain an updated comprehensive portfolio of all research work.
- Present research at all stages of the work, at all available venues and competitions.
- Maintain regular, demonstrable contact with a mentor (once one is obtained) copying course facilitators on ALL correspondence.
- Develop quarterly timelines, an end-of-year abstract, an annual reflection, and an assessment of goals.
- Communicate regularly and clearly with mentor and course facilitators
- Lastly, all students must attend (mandatory) our annual science symposium and present a poster of an article read (first year) or their work to date (second year), and their findings (third year). In addition to the posters, all Seniors will present an oral presentation on their research findings.

OBJECTIVES:

- Complete a college-level, original research project, and a research paper, and present your research by the end of senior year.
- Tenth Grade
    - Conduct literature searches for scientific information
    - Select a research topic
    - Consider prospective mentors
    - Develop research skills
    - Present scientific research in PowerPoint and Display Board formats for our Science Symposium
- Eleventh Grade
    - Collaborate with mentor or continue mentor search
    - Design research experiment

    - Develop a timeline for completion of data collection
    - Poster Board for our Science Symposium
- Twelfth Grade
    - Complete research project
    - Write and submit your research paper to the Junior Science and Humanities Symposium (JSHS), SUNY Albany
    - Present your findings at:
        - JSHS in Albany or at another appropriate competition
        - Dutchess County Regional Science Fair
        - Spackenkill High School's Science Research Symposium

GRADING:

- Quarterly grades are determined by averaging biweekly meeting grades, maintaining a physical portfolio in addition to an online portfolio, and presentations.
    - A minimum of ***four*** biweekly meetings per quarter are required
        - If the minimum is not met, a grade of 50% will be assigned for the missed biweekly meeting
- Your biweekly evaluation grade will be reduced if you do not stay on task during class.
- The final grade is an average of 5 grades:
    - Four marking periods
    - Final and Midterm Averaged together

STANDARDS OF ACADEMIC INTEGRITY:

The University at Albany expects all members of its community to conduct themselves in a manner befitting its tradition of honor and integrity. Members are expected to assist the University by reporting suspected violations of academic integrity to appropriate faculty and administrative offices. Behavior detrimental to the University's role as an educational institution is unacceptable. Claims of ignorance, unintentional error, or academic or personal pressures are not sufficient reasons for violations of academic integrity.

The following are examples of the types of behaviors that are defined as academic dishonesty and are therefore unacceptable:

> **Plagiarism:** Presenting as one's own work the work of another person. Plagiarism includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, the purchase of prepared research or completed papers or projects, and the unacknowledged use of research sources gathered by someone else; **Cheating on Examinations:** Giving or receiving unauthorized help before, during, or after an examination; **Multiple Submission:** Submitting substantial portions of the same work for credit more than once; **Sabotage:** Destroying, damaging, or stealing of another's work or working materials; **Unauthorized Collaboration:** Collaborating on projects, papers, or other academic exercises that is regarded as inappropriate by the instructor(s); **Falsification:** Misrepresenting material or fabricating information in an academic exercise or assignment; and **Bribery:** Offering or giving any article of value or service to an instructor in an attempt to receive a grade or other benefits not legitimately earned or not available to other students in the class. **Circumventing Security:** Users are prohibited from attempting to circumvent or subvert any system's security measures. Users are prohibited from using any computer program or device to intercept or decode passwords or similar access control information. **Forgery**: Imitating another person's signature on academic or other official documents, including class material. **Theft, Damage, or Misuse of Library or IT Resources**: Removing uncharged library materials from the library, defacing or damaging library materials, intentionally displacing or hoarding materials within the library for one's unauthorized private use, or other abuse of reserve-book privileges. Any violation of the University's Responsible Use of Information Technology policy. This includes, but is not limited to, unauthorized use of the University's or another person's computer accounts, codes, passwords, or facilities; damaging computer equipment or interfering with the operation of the computing system of the University. **Generative Artificial Intelligence tools** are expressly forbidden to be used to aid in writing student research reports, research posters, and any other written work that is associated with research results. This includes ChatGPT or any other AI tools.

The violations listed above will be reported to the UHS Program Office immediately. All parties involved will be directed accordingly.