

**Blind Brook-Rye UFSD
Science Research Program
SCIENCE RESEARCH COURSE REQUIREMENTS:
THREE-YEAR PROGRAM**

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Prerequisite: B⁺ or better, final grade in Living Environment or Earth Science and 88 or better, score on Living Environment or Earth Science Regents Examination. Recommendation of the Living Environment Instructor

Course Overview and Objectives: This unique course offers highly motivated students, with a strong interest in science, the opportunity to explore science research in a genuine scientific setting. Students spend their first year of the course exploring different fields of research, focusing on one particular topic of interest, and locating a mentor in the scientific community who will assist them in their research. In their junior year, students will begin their research in earnest under the supervision of their mentor. In their final year, students will complete their research, prepare their results for presentation to a variety of audiences and submit their final projects to several local, regional and national competitions.

Note: Although students are carefully guided through the process of finding a mentor, this is ultimately the student's responsibility. Although all efforts will be made to help the student, there is no guarantee that a mentor will be found. Those students without a mentor by the end of sophomore year are no longer eligible for this program. In certain instances, when a mentor is found junior summer, arrangements may be made to remain in the program as long as the mentor agrees that the project can be completed by the end of senior summer and the student is willing and able to meet the concentrated time commitment.

Time Commitment:

School Year

All students are required to complete 240 hours of research time during the school year. This is broken down as follows:

- Class time 80 hours
- Bi-weekly assessment meetings 20 hours
- Independent coursework outside of class 3.5 hours per week or 7 hours for every two-week cycle.
- All students are required to attend at least one major science fair during the year. Parents are responsible for all transportation.

Junior and Senior Summers

Students and parents should be aware that research projects demand an extensive amount of time and continuity. Most of the actual research occurs during the Junior and Senior summers in addition to the school year. All students enrolled in the Blind Brook High School Science Research Program are required to continue research during the summer months. The options are as follows:

Blind Brook High School Program (no college credit)

Students are required to log in a minimum of 35 hours, in total, of laboratory work with a mentor.

Note: Each project is different and mentors may require more hours to complete the project. The mentors' time requirements override any Blind Brook High School minimum time requirements.

University in the High School Program (2 college credits)

- Students must spend a minimum of three days per week (**minimum of 90 hours total**) in the lab during the summer. Those who will be unable to meet these requirements due to extended traveling, camp, or other summer obligations should not enroll in the University in the High School Program for college credit.
- All juniors and seniors enrolled in the Science Research Program and actively working with a mentor, will have the opportunity to earn up to 12 college credits by registering for The University in the High School Program, at the University at Albany. The credits are earned as follows:
 - **Juniors: A Cas 109 Intermediate Science Research (2 Credits) July – August.** Offered summer session only.
 - **Juniors: A Cas 110 Intermediate Methods of Research (4 Credits) September – June.** Students must be enrolled throughout an entire academic year to obtain credit.
 - **Seniors: A Cas 209 Advanced Science Research (2 Credits) July – August.** Offered summer session only.
 - **Seniors: A Cas 210 Advanced Methods of Research (4 Credits) September – June.** Students must be enrolled throughout an entire academic year to obtain credit.

Important: When parents enroll students in this program they sign a contract with the University at Albany, not Blind Brook High School. Failure to meet the above requirements will result in a Failing grade on a permanent college transcript.

Required Materials: Students will need to bring the following with them to class every day:

- 1) 2" D-ring binder – this is your 'portfolio' (more later)
- 2) Dividers for your portfolio (approx. 14)
- 3) Pens and pencils
- 4) Folder
- 5) Highlighter. (Note: Always have one!)
- 6) Lab notebook:
 - Must be bound
 - Must have carbonless duplicate pages
 - Pages must be numbered (should be ~ 100)

Science Research Grading Policy

Assignments: Students will be given ample time to complete all assignments. If a student anticipates difficulty in meeting a deadline, s/he must see the teacher in a timely manner **prior** to the deadline. Assignments are due at the beginning of class; those not handed in during class will be considered late and will receive a maximum value of 60%.

Quarterly grade will be determined as follows:

- 50% Bi-Weekly Meetings
- 25% Quarterly Presentations/Assignments
- 15% Class and Homework Assignments
- 10% Class Participation

Final grade in the course will be determined as follows:

- 20% Quarter 1
- 20% Quarter 2
- 20% Quarter 3
- 20% Quarter 4
- 20% Science Symposium Presentation (more on this later).

Science Research Classroom Policy

Attendance: Students are expected to attend every class period and to devote their time to Science Research related activities **ONLY**. Accommodations will be made for any excused absences incurred by a student. If you know you will be missing a class in advance, please see me before your absence so that appropriate arrangements can be made. For unplanned absences, please see me as soon as you return to school. Unfortunately, unexcused absences cannot be accommodated.

Classroom Environment: Effective research requires an environment where students feel safe hazarding guesses, offering their thoughts, and asking questions. This requires that respect be shown for all persons at all times, be they student, teacher or guest.

Student Responsibilities

Freshman Year Responsibilities:

- 1) Document **all** hours in your lab notebook. This documentation should include:
 - a. Date
 - b. Time
 - c. Location
 - d. Number of hours spent
 - e. A **detailed** summary of what you did.
- 2) Set bi-weekly meeting dates and always be on time and fully prepared.
- 3) Advance to reading peer reviewed journal articles by mid-winter. Bring all articles read and highlighted, as well as the accompanying notes or summaries, defined vocabulary, and remaining questions to each bi-weekly meeting.
- 4) Conduct a thorough literature search on your chosen topic.
- 5) Present peer reviewed research paper, in PowerPoint format, to class quarterly.
- 6) Correspond with scientists in the area.
- 7) You must be involved in no less than 7 outside-of-class hours of research-related activities in a two-cycle period.
- 8) Present your poster at our End-of-the-Year Symposium

Sophomore Year Responsibilities:

- 1) Document **all** hours in your lab notebook. This documentation should include:
 - a. Date
 - b. Time
 - c. Location
 - d. Number of hours spent
 - e. A detailed summary of what you did.
- 2) Set bi-weekly meeting dates and always be on time and fully prepared.
- 3) Choose topic by mid-October
- 4) Advance to reading peer reviewed journal articles by mid-winter. Bring all articles read and highlighted, as well as the accompanying notes or summaries, defined vocabulary, and remaining questions to each bi-weekly meeting.
- 5) Conduct a thorough literature search on your chosen topic.
- 6) Present peer reviewed research paper, in PowerPoint format, to class quarterly.
- 7) Correspond with scientists in the area and obtain a mentor.
- 8) Collaborate with mentor on a hypothesis and design a research plan.
- 9) You must be involved in no less than 7 outside-of-class hours of research-related activities in a two-cycle period. If you have a mentor, all of these hours must be under his or her guidance.
- 10) Optional: Register with the University at Albany's, University in the High School Program for College credit (Summer Session: A Cas 109-Intermediate Science Research, 2 credits). 90-hour laboratory commitment.
- 11) Present your poster at our End-of-the-Year Symposium

Junior Year Responsibilities:

- 1) Adhere to all the above responsibilities.
- 2) Be prepared to present briefly to the class, explaining what you did this past summer or what you are currently working on.
- 3) Optional: Register with the University at Albany's, University in the High School Program for College credit (Full Year: A Cas 110- Intermediate Methods of Research, 4 credits).
- 4) Complete experimentation and data gathering. Project must be finished by fall of senior year.
- 5) Start writing your research paper.
- 6) Enter science competitions. Download all applications and guidelines.
- 7) Present your current research at our End-of-the-Year Symposium.
- 8) Optional: Register with the University at Albany's, University in the High School Program for College credit (Summer: A Cas 209-Advanced Science Research, 2 credits). 90-hour laboratory commitment.

Senior Year Responsibilities:

- 1) Adhere to all above responsibilities.
- 2) Optional: Register with the University at Albany's, University in the High School Program for College credit (Full Year: A Cas 210- Advanced Methods of Research, 4 credits).
- 3) Start **aggressively** finalizing your research paper.
- 4) Enter a minimum of 5 science competitions. Starts early fall.
- 9) Read **everything** there is to read about any related research currently (or recently) in the news pertaining to your topic. Judges will focus on this very often, so you should be prepared!
- 5) Present your research, in PowerPoint format, at our End-of-the-Year Symposium.

Parent/Student Science Research Program Agreement

Please sign and return.

I have read and understand the requirements listed above and I recognize my responsibilities and the time commitment necessary to be successful in this program.

Parents are asked to understand, support and affirm this Science Research Program agreement.

Student's signature: _____ Date: _____

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