

Term	2013-2014AY	Institution	Howard University
Program	Honors Program Syllabus	Class Times	W 12:10-1PM
Lecture Room	EE Just: RM 224	Prerequisites	BIOL101, BIOL102
Texts:	<u>Required:</u> None	Website	www.biology.howard.edu ; Click on the "Honors Program" link

Honors Program in Biology:

As mandated by the faculty members in the Department of Biology, all Biology majors enrolled in the Honors Program (HP) of the College of Arts and Sciences begin their honors courses in the first semester of the sophomore year. The purpose of the HP is to provide students the opportunity for mentored instruction and training in a specific area of research sufficient to develop the Honors thesis. Students admitted to the HP at the end of their freshman year (in summer), should contact the Honors Advisor (Courtney Robinson, courtney.robinson@howard.edu) in the Department of Biology, no later than the end of the first week of the fall semester. All honor students must enroll in the following series of courses:

Importantly, all 7 credit hours earned from the six courses offered by the Department of Biology Honors program are advanced electives. All Biology majors must satisfy a total 14/15 credits of advanced electives.

Year	Semester	Course	Credits	Course Title
Sophomore	Fall	BIOL 217	1	Sophomore Honors Orientation
Sophomore	Spring	BIOL 218	1	Sophomore Directed Readings
Junior	Fall	BIOL 317	1	Junior Directed Readings
Junior	Spring	BIOL 318	1	Honors Proposal Development
Senior	Fall	BIOL 491*	2	Honors Research*
Senior	Spring	BIOL 492	1	Honors Thesis

* Students are to register for Honors Research and not Independent Investigations

Courses: Honors Orientation

Honors Orientation (BIOL217) will introduce students to the requirements and procedures of the Honors Program in Biology. Students will also be introduced to faculty members and their respective areas of interest so that they can make informed decisions in selecting a mentor and area of research. Briefly, students will spend approximately 2 hours under didactic instruction and 2 hours participating in research seminars per month over the course of the semester. Instruction will provide the following: a) exercises in reading primary and secondary literature, b) approaches to literature search and research practice in biological sciences, and c) presentations by faculty members open to supporting students for Directed Reading. The second part is attendance and active participation in Department Research Seminars. Research Seminars host researchers and investigators from diverse biological disciplines, creating a forum to present their scientific work. You, as the audience member, have the opportunity to network, learn new concepts in various fields/disciplines, and expand your knowledge of science. The schedule of speakers is available on the website: www.biology.howard.edu, under the "Research Seminars" link. Failure results in having greater than 3 unexcused absences and/or failure to participate in class activities.

** Schedule for Sophomore Honors Orientation BIOL217

Week	Date	Lectures/Research Seminars	Assignment
1	8-28	Presentation of Honors Program logistics <i>** Presentation: Michael Lipscomb; Courtney Robinson</i>	
2	9-4	Research Seminar	
3	9-11	Introduction to Science and Research in Concept and Application; hypothesis-driven research <i>** Presentation: Anna Allen, Mary McKenna</i>	<i>Article #1</i>

4	9-18	Research Seminar	<i>Article #2</i>
5	9-25	Research Seminar	
6	10-2	Dissecting and Analyzing Scientific Research Papers: <i>Components of a scientific research paper</i> ** Presentation: George Middendorf; Janelle Burke	
7	10-9	Research Seminar	<i>Article #3</i>
8	10-16	Engaging in Directed Readings; Selecting and discussing scientific literature ** Presentation: Nathan Smith; Atanu Duttaroy;	
9	10-23	Research Seminar	<i>Article #4</i>
10	10-30	Development of the Honors Proposal and How to engage in Honors Research **Presentation: Hemayet Ullah; Broderick Eribo	
11	11-6	Research Seminar	<i>Article #5</i>
12	11-13	Development of the Honors Proposal and How to engage in Honors Research ** Presentation: Kevin Jones; Jack S. Frankel	
13	11-20	Research Seminar	<i>Article #6</i>
14	11-27	Thanksgiving Recess	
15	12-4	** Submission of <u>signed</u> Directed Readings agreement form for BIOL218.	
		Constructing an Honors Thesis	

Directed Reading (BIOL218, Spring Sophomore Year and BIOL317, Fall Junior Year)

Directed Readings classes (BIOL218 and BIOL317) are courses of individualized instruction available only to biology majors in the COAS Honors program. The courses provide the student introduction to a specific area of research in biology. Under the guidance of a faculty mentor, students will read relevant, periodical literature in the biological sciences. The student meets with the mentor to discuss assigned readings in current periodical literature. Papers are to be analyzed critically for findings and methodology, with the aim of accumulating information on current knowledge and outstanding issues in the specific area of research. Students must attend the Research Seminars.

Students are required to identify a mentor in the Department of Biology; herein called *internal* mentor. It is with this mentor that students will receive direction and mentorship as they progress through Honors Program in the Department of Biology.

Under prior consent, students may select an external mentor by a tenured or tenure-track faculty member outside the Department of Biology. If an external mentor is selected, a member of the Department of Biology must serve as *liaison*; all communication regarding grade submission, completion of course content, and disciplinary actions will be that of the responsibility of the liaison, not external mentor. The instructor of record will NOT interact with any member outside of the Department of Biology; that responsibility will be with the liaison. Note: the external mentor must complete an external mentor agreement form.

Students are required to submit a list of references (appropriately formatted) for articles discussed with mentor by mid-term deadlines October 15th for Fall and March 15 for Spring. For final grade, students are required to submit a **complete list of all articles read and a 2-page maximum paper summation of their semester experiences, in respect of the area of literature research, by the last day of formal classes**. The paper is an informal description of the work performed, highlighting your experiences, acquired skill sets, topics learned, and foresight for thesis proposal development. All items are submitted to the instructor of record.

This experience develops the skills and background information necessary for writing a thesis proposal to be submitted no later than the middle of the semester in which Honor Research is taken. The student's obligations for each semester of Directed Reading and Honors Research are spelled out in the Mentor Agreement for that semester.

Grading Rubric:

Assignment	Points	Explanation
References	25	All journal articles read for the given semester should be assembled into appropriately formatted bibliography or literature cited page. <u>Minimum of eight (8)</u> .
Participation	40	Dates of meetings should be assembled; minimum of eight class meetings. Attendance to the research seminars. 5-pts per meeting.
Report	35	Minimum of ½ page to two-page maximum summary report of articles read, annotated with learning objectives, relevance to research proposal, and overall significance
Total	100	89-100 – “A”; 79-88 – “B”; 68-78 – “C”; <67 “D”

Honors Proposal Development (BIOL318) – Spring Junior Year

During this course, students will be heavily engaged in developing their proposal. Effectively, the proposal is a plan, or guide, to be followed during Honors Research in order to generate the substantial body of work required for the thesis. It is expected that the student will begin formulating their hypothesis and begin inquiry based-investigations, through a combination of extensive literature search and generation of preliminary data through laboratory practice. It is also anticipated that the students will begin assembling their thesis under guidance of their research mentor, working to expand to completion through BIOL491 and BIOL492. A title and 200 word proposal abstract is required for successful completion of the course. Letter grade; 1-unit

Assignment	Points	Explanation
References	25	All journal articles read for the given semester should be assembled into appropriately formatted bibliography or literature cited page. <u>Minimum of eight (8)</u> .
Participation	40	Dates of meetings should be assembled; minimum of eight class meetings. Attendance to the research seminars. 5-pts per meeting.
Proposal	35	A title and 30-line proposal abstract is required for successful completion of the course
Total	100	89-100 – “A”; 79-88 – “B”; 68-78 – “C”; <67 “D”

Honors Research (BIOL491) – Fall Senior Year

Fall of senior year, students enroll in BIOL491-Honors Research. The 3-unit course has no class meeting times. Students are expected to be heavily engaged in active research with their respective mentor. The aim is to generate data following their submitted proposal. This data will be used to generate the Honors thesis during BIOL492-Honors Research in the spring of the senior year. This 3-unit course serves as an Advanced Elective. Note: students register for Honors Research-BIOL491 not the Independent Investigations course BIOL390. Suggested letter grade is provided by mentor.

Honors Thesis (BIOL492) – Spring Senior Year

The honors thesis must be completed by March 1st. The thesis proposal and the honors thesis must be done under the supervision of the faculty mentor. While the honors thesis is expected to be a substantial exploration of the research topic, its length and content are at the discretion of the honors mentor, who must approve the honors thesis before it is submitted to the Honors Program. Note: students register for Honors Research-BIOL492 not the Independent Investigations course BIOL390.

*Syllabus adapted from T. Bremner, PhD (tbremner@howard.edu)

*Syllabus construction assisted by R. Duffield, PhD (rduffield@howard.edu)

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