

Introduction to becoming a scientist
ENV SCI/HUM BIOL 101
Fall 2011

2:15 p.m., Friday ES 306
class #: 9526, 9525

Instructor: Dr. W. Johnson
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Office hours: MWF 12:35-1:30
or by appointment

Book: de Kruif, Paul, *Microbe Hunters*, 1926, various publishers.

The purpose of this seminar course is to assist you at having an accurate understanding of the challenges and rewards of a science major and to equip you with certain essential professional skills that will be used throughout your career.

1. path to a B.S. degree: You will prepare a plan of study that results in a B.S. degree. This plan will take into account the prerequisites for all courses, the periodicity and time when courses are taught, and the best sequence for taking related courses. You will consider the advantages of selecting particular electives.

2. path from a B.S. degree to a career: You will take an “Assessment Interest Profiler.” You will prepare a list of careers that use your B.S. degree. You will examine the expectations and responsibilities for several of these careers. You will prepare a list of potential employers, graduate programs, or professional schools that you may use in the future.

3. searching and using research literature: You will exam the current research literature on a scientific topic of interest. You will learn how to access and use the relevant databases. You will prepare a short (~800 word) review of your topic. Your paper is to include 10 references (at least 2 are to be less than one year old). You will exchange a first draft of your paper with student colleague for critique at the course D2L site. You will use the track changes feature of “Word” to edit a colleague’s paper.

4. analyzing data with a spreadsheet: You will learn how to use a spread sheet to analyze data and prepare a report. You will have three project assignments to complete. You may work with student colleagues to complete these projects.

5. biographical or historical perspective on science: You will join a small group of student colleagues and read and discuss a biographical or historical book on science. We will read *Microbe Hunters* by Paul de Kruif. For each chapter you are to post 3 comments by 11:00 p.m. on the Wednesday before our class discussion of that chapter. You are also to respond to at least three posts by other students.

6. faculty presentation of current science: You will increase your ability to profitably use the current scientific research literature. Assignments: a) answer questions on pre-seminar assignment, b) critically listen to faculty presentation of research, c) answer questions on post-seminar assignment.

Grade:		<u>points</u>
1)	plan of study	10
2)	career path	10
3a)	1 st draft of paper	20
3b)	colleague critique	20
3c)	final draft of paper	50
4)	spreadsheet project assignments	30
5a)	book club postings at D2L site	50
5b)	book club participation	50
6)	seminar assignments	<u>20</u>
		250

- 7) Only those students who earn less than 70 points on assignments 5a and 5b combined will be required to take a final exam on the material from Microbe Hunters. The final exam will be worth 100 points.

The usual range of percentage scores for grades in this course: A, 90-100; AB, 87-89; B, 80-86; BC, 77-79; C, 70-76; D, 60-69; F, 0-59. This grade scale may be adjusted at any time by the instructor if a different scale is deemed more appropriate for the nature of the course during this particular semester.

Tentative Schedule

Week	Date	Activity	Assignment for following week
1	Sept 9	careers in science a personal perspective.	select major & minor for planning
2	Sept 16	resources at Career Services Steven Newton	assessment test at Career Services web site bring catalog requirements for major to class next week
3	Sept 23	preparation of 4 year study plan	finish study plan
4	Sept 30	turn in 4 year study plan journals to read	select topic for review paper
5	Oct 7	how to use library resources, CL 304 Joseph Hardenbrook	write review paper and upload at D2L dropbox
6	Oct 14	journal club seminar	do colleague critique using "track changes" in Word and upload critiqued paper at D2L dropbox
7	Oct 21	Video: The life of molecular biologist Rosalind Franklin	turn in final version of paper at D2L dropbox
8	Oct 28	using Excel for scientific plots	read Microbe Hunters, chapter 1, post at D2L by Wed
9	Nov 4	Microbe Hunters discuss chapter 1	read Microbe Hunters, chapter 2, post at D2L by Wed
10	Nov 11	discuss chapter 2	read Microbe Hunters, chapter 3, post at D2L by Wed
11	Nov 18	discuss chapter 3	read Microbe Hunters, chapter 4, post at D2L by Wed
12	Dec 2	discuss chapter 4	read Microbe Hunters, chapter 5, post at D2L by Wed
13	Dec 9	discuss chapter 5	
	Dec 16	1:00-3:00 Final Exam	