

COURSE SYLLABUS

Biology 410, Directed Readings, Fall 2011

Instructors: Section A = Karr, Wilkerson, Wright

Section B = Ball, Trentham

Section C = Boyce, Hopkins

Rooms: DSC 217/ 318 / 207

Phone: See directory for individual numbers or call main office at x3250

Office Hours: Posted on office doors

Texts: 1) Handouts (departmental faculty)

2) Carson-Newman Writing Guide

COURSE OBJECTIVES:

This course is designed for the student majoring in Biology. The objectives of this course are to introduce the student to critical analysis of scientific papers, literature searches/library use, and to provide experience in leading a journal discussion. Students will lead discussions of select scientific papers, both current and classical.

GRADING:

Grading will be based upon the following:

<u>Area</u>	<u>Point Value</u>
1 – Presentation/Discussion	40
2 - Class Participation	15
3 - Assignments	15 [2 x 7.5pts]
4 - Quizzes on background info	30 [5 x 6pts]

Assignments are due at the beginning of the class period (see schedule on next page). Please make an extra copy to keep with you for the discussion which will follow. Students will be expected to participate in a number of activities and projects including field trips, scientific reports, literature searches, and especially the group discussion sessions.

The final grade will be assigned as follows:

A = 90-100 points, B = 89-80,

C = 79-70, D = 69-60, F = 59 or less

In addition there may be other writing/homework assignments/quizzes; points will be specified at time of assignment. Late assignments will be docked 10% for each weekday late.

The instructors reserve the right to change this syllabus/grading procedure. The class will be notified verbally of such changes. **NO** “extra credit projects” are allowed. Your grade will be based on the criteria specified above. If you are having trouble with the course, see your instructor or contact the Academic Support Center (early in the semester – do not wait until the end of the semester). If you are absent from class it is your responsibility to obtain what was covered, announcements, assignments, etc. Any questions/concerns about a grade received must be brought to the attention of your instructor within one week of receiving that grade - otherwise the grade stands.

Any student with a disability which requires special accommodations must notify the instructor and submit appropriate documentation to David Humphrey, Kathleen Manley Wellness Center, phone 471-3268 in order to access accommodations. Do this early in the semester so that accommodations may be made as soon as possible.

TENTATIVE COURSE SCHEDULE

August	26	Introduction
September	2	Assignment - Boyce
	9	Assignment - Wright
	16	Artificial Sweetener and Obesity (Boyce)
	23	<u>Student discussion/presentation</u>
	30	Genetically Engineered Eggplant (Trentham)
October	7	<u>Student discussion/presentation</u>
	21	Brain Changes (Hopkins)
	28	<u>Student discussion/presentation</u>
November	4	Electroreception in Guiana dolphin (Wilkerson)
	11	<u>Student discussion/presentation</u>
	18	Evolutionary relationships of jawed vertebrates (Karr)
December	2	<u>Student discussion/presentation</u>
	12	(Monday) Final Period 3 p.m.-5p.m Course Evaluation

Each student, working in a team of 2, will choose an article from the list of choices, present the key points of the article, and lead a discussion on it. You may **not** use power-point; this is an **informal discussion**. Articles for class discussion, background information, and/or questions will be/are available on C-N Online.

All class members must also read the article prior to coming to class and have the article with them for the discussion. You will be expected to ask questions and in other ways contribute to the discussion. At the beginning of the class periods when student discussions are held, there will be a quiz over the background information. If you are tardy you will have less time to complete the quiz.

Additional policies:

- Please have cell phones set to “off” or silent (vibrate) mode.
- Regulations prohibit the distribution of grades via e-mail or telephone.

Science Disclaimer:

This course covers scientific information as it is currently understood. As is its nature, all science is subject to revisions and/or change as newer, more accurate information becomes available. Therefore, all material presented in this class should be approached with an open mind, studied carefully, and critically considered.

Emergency statement:

If an emergency arises in this classroom, your instructor will inform you of actions to follow to enhance your safety. As a student in this class, you are responsible for knowing the location of the nearest emergency evacuation route. These directions appear on the maps posted on the walls throughout this building. If police or college officials order us to evacuate the classroom

or building, follow the posted emergency route in an orderly manner and assist those who might need help. To receive emergency messages, set your cellular phones on silent mode before entering this classroom. If you observe or receive an emergency alert, immediately inform your instructor.

Absence Policy:

College policy requires students to attend all classes and attendance will be taken. When possible, prior permission for missing a class should be obtained from your instructor. Attendance at all class meetings is required and a student is responsible for all the work. Students will be allowed to make-up class work missed with no penalty (or, at the instructor's discretion, the assignment may be dropped) if the absence was caused by documented illness, death of immediate family member, or participation in college-sponsored activities. Make-up assignments must be done promptly and meet designated deadlines. For college-sponsored activities, the student must contact the instructor prior to the class or lab that will be missed. In case of illness, the student must contact the instructor within 24 hours (or as soon as possible if hospitalized). If the student misses the number of times the class meets in 4 weeks, the student will be dropped from the class with an "F" – regardless of the reason for the absences.

Please note in the Fall 2011 schedule the following dates:

Last day to drop without receiving a grade	Wed. Aug 31
Midterm grades turned in	Fri. Oct 14
Last day to drop and receive a W	Wed. Nov 2
(Courses dropped after this date receive a WF)	

BIOL 410 Directed Readings

(For students seeking teacher licensure)

Knowledge and Skills covered in this course:

Understand how scientists and technologists create, describe, disseminate, and refine new knowledge within their disciplines. (Biology 7-12)

Suggestions for Leading a Discussion of a Journal Article

1- Goal of Assignment

Our goal is to encourage you to learn how to critically evaluate information presented to you in the form of scientific data. Our intent is to examine primary research articles in a presentation that will involve group discussion. Your job is to introduce the paper by giving us some very brief background information and explain the methods involved, and then lead a discussion of the data. It is also your responsibility to give us the authors' interpretation of the data, as well as your own.

2- What to look for in Reading the Article

The primary literature, detailing the results of various research projects, is one of the most rigorous forms of scientific communication. These publications have all gone through the process of peer

review by fellow scientists, but may still contain numerous "problems". These problems may include irrelevant background information, incomplete or vague descriptions of the methods, equivocal results, or faulty interpretation of the data. It is up to the reader to decide how believable a given study is. Multiple interpretations are best left to novels. Good data will lead to common interpretations.

3- How to Present Your Article

This is to be an **informal discussion** in which you will be responsible for initiating a critical evaluation of the data after giving a brief summary of the goals and methods of the study.

Include the following:

- 1) The title and authors of the article.
- 2) The date published and location of the study.
- 3) A very brief introduction to the topic, taken primarily from the introduction, but including your own supplementary reading. This should include why the authors undertook the investigation. (You should plan on about 25 minutes for your discussion oriented presentation so do not spend too much time on introductory material – about 5 minutes.)
- 4) A brief overview of the general methods used, including any special materials.
- 5) A discussion of the data including the authors' and your interpretations.

This is **very important - direct your audience to the data.**

- 6) A critique of the research and the writing style.

4- How You Will Be Graded

Not only the presenter, but each student, will be graded each day on his/her contribution to the discussions. **If you do not volunteer comments, expect direct questions from the presenters or your instructors.** See the grading information on the first page of the syllabus for details.

Hints for Using Online Articles

Many papers are published online both in an "HTML" (webpage) version and in a "PDF" ("photocopy") version. The PDF version is sort of like a photocopy of how the paper looked in the actual journal and is usually the shorter version in terms of how many pages you will have to print out. The HTML version generally takes more pages to print out, but often has some interesting features:

- The citations at the end of the paper may be "hot-linked" to abstracts or even complete online copies of the older papers that this paper cited.
- There may be links to more-recent papers that cite this paper.
- The figures may be easier to import to a PPT presentation from the HTML version.
- There may be a link to abstracts of other articles by the authors of this paper.
- There may be a link to a list of "similar articles", which could be helpful next semester in finding an article to present that meets the requirements in terms of when it was published and that is "just right" (not too long, not too short, not too many figures, not too few figures, etc.).

BIOLOGY 410 - DIRECTED READINGS – Grading Form

Names: (1) _____ (2) _____ Date _____

Topic _____ Time Started _____ Time Finished _____

Total Score _____ /40 points maximum (subheading points as indicated)

1. ____ 2. ____ **Orientation to the Study (5 pts.)**

Leaders **briefly** introduce the research (by whom, where, when, questions asked, include a flow chart or diagram of the design of the research as a handout).

1. ____ 2. ____ **Presentation of Data (5 pts.)**

Ahead of time, leaders break large data tables or complex figures into clearer, simpler portions as handouts for the presentation. (Each “chunk” of data should be discussed by the group before moving on to the next chunk of data.)

1. ____ 2. ____ **Discussion of the Data (8 pts.)**

Leaders enlist the participation of specific class members to do the following, but are prepared to correct misunderstandings.

- ____ Clarification of graph axes and column headings
- ____ Verbalization of hypotheses tested /questions investigated
- ____ Identification of statistically significant (and not significant) comparisons of data
- ____ Identification of the specific data used to support conclusions
- ____ Evaluation of authors’ conclusions on the basis of the data

1. ____ 2. ____ **Discussion of the Advantages and Shortcomings of the Paper (4 pts.)**

Leaders elicit the participants’ evaluation of the paper, prompting them to explain their reasoning.

- ____ Effectiveness of Writing
- ____ Experimental Design / Approach to the Problem
- ____ Clarity of Graphs and Tables
- ____ Overall Validity/Strength of Conclusions

1. ____ 2. ____ **Summary of the Value of the Study – Why Should We Care? (4 pts.)**

Leaders promote a final “wrap-up” discussion addressing this.

1. ____ 2. ____ **Maintaining Focus on the Topic and on the Supporting Data (4 pts.)**

Leaders “step in” if the discussion gets off the subject or does not focus on whether the data supports the assertions made by the authors.

1. ____ 2. ____ **Encouraging Participation – Maintains Class Involvement (4 pts.)**

Leaders maintain class involvement, asking specific questions (prepared ahead of time), if needed.

1. ____ 2. ____ **Demonstration of Breadth of Knowledge (6 pts.)**

Leaders know more about the topic than what is in the article and find ways to introduce relevant information about the topic.

Comments: