Biological Literature and Communication
The University of Toledo
College of Natural Sciences and Mathematics
BIOL4700-003

Instructor:	Jianyang Du	**Term:**	Spring 2017
Office Hours:	Tuesday 11-12 or by appt.	**Class Location/Times:**	WO1240/MW 3:30-4:45PM
Office Location:	WO3205B	**Lab Location/Times:**	WO3205/Weekdays
Office Phone:	419-530-2824	**Course Website:**	https://blackboard.utdl.edu
Email:	Jianyang.du@utoledo.edu	**Credit hours:**	3

COURSE/CATALOG DESCRIPTION
A writing intensive course that focuses on reading original literature in biology in a variety of formats. Required of all biology majors.

COURSE OVERVIEW
This course will train students in the methods that professional scientists use to communicate. We will first review the underlying scientific thought process, the Scientific Method. We will then see how the Scientific Method informs and shapes investigation and communication, by examining examples from the classical and modern scientific literature. Finally, we will practice scientific presentations, both oral and written, using the scientific method as our organizing principle. These skills are critical for the student proceeding into technical fields such as research or clinical work, where this communication style is the norm. However, students going into other fields will also benefit because of the increasing prevalence of scientific thinking and analysis for decision-making.

COURSE OBJECTIVES
Upon completion of this course, the student will be able to:

1. Evaluate scientific research in terms of the Scientific Method. Specifically, Identify and recognize the interconnections between 7 key elements of scientific thought: Background/significance, Hypothesis, Rationale, Approach, Predictions, Results, Interpretation.
2. Read and analyze scientific papers.
3. Write effectively about science, using the Scientific Method as an organizing principle
4. Speak effectively about science in an oral presentation, using the Scientific Method as an organizing principle
5. Efficiently search the scientific literature to identify the most important papers shaping a field of interest

TEACHING STRATEGIES
The principal mode of learning in this class will be the in-class discussion. Our only materials will be published scientific papers. These are available through public databases, and will also be posted on the course website.

It is imperative that each student comes prepared, and participates actively in the discussion. To ensure compliance, a significant fraction of the course grade will be determined by a student's participation level (see Evaluation, below), along with unannounced pop quizzes, used at the instructor's discretion. To earn the maximum points in this category, you need to do three things: first, show up to every class. Second, read assigned papers before class; the pop quizzes will ask basic questions designed to establish whether you read the paper. Third, participate in the discussion. The instructor will keep track of who is an active participant and who is not.

Learning to communicate scientifically is a skill that can only be learned by doing. You will be given 5 writing assignments. About 4 of these will be relatively short, analyzing the papers we discuss in class in terms of the 7

critical elements discussed above. A final assignment (Term Paper) will be longer, and worth more points. Here you will be expected to put your writing and analytical skills together to produce an in-depth critical review of an interesting scientific question, focusing not only on the big picture but also on experimental methodology and interpretation of results. The students will choose topics of interest to them, but an abstract and outline will need to be approved by the instructor before proceeding with the writing (Assignment schedule and approval deadline TBA). Also, each student will give a 15-minute presentation in front of the class based on their Term Paper, in the final few weeks of class.

In addition to these major objectives, we may cover an assortment of other topics as time permits. These may include conducting literature searches, the use of common computer software to manage citations in written work, how the publishing process works, and organizing effective scientific presentations.

Initially, I will introduce some basic skills of searching literatures, communicating with scientists and organizing your literatures. Next we will analyze an assortment of papers written in various styles. By the end of the course, students should be comfortable reading research papers and organizing and expressing their ideas in written and oral formats.

This BIOL4700 section is designated as the "Neurobiology" WAC, and fulfills the requirements for the Neurobiology Concentration. However not all of you are part of the Neurobiology Concentration, so the general emphasis will be more on Biology topics that do not require a Neuro background. In other words, **if you are not a Neurobiology student, you will not be at a disadvantage!!** If you are a Neurobiology student, your final presentation (see below) will be a neurobiology paper, so this course will still fulfill the Neuro Concentration requirement.

Finally, Student input into the choice of current papers is highly encouraged! If you think there is something cool out there we could be discussing LET ME KNOW!!

WORKWEEK

- **January 16 is Martin Luther King Day, No Class**

The pace of the course is somewhat variable, depending on how our discussions progress. Reading/Written assignments will be given in class at least one week before the discussion. Group oral presentations in February/March, and final oral presentations in April. The oral presentation will be scheduled 6-8 weeks ahead, and the final written assignment will be due the final day of class.

Term paper
Students will have selected a topic on which to prepare a term paper. The final term papers will be 8-10 double-spaced type written pages (not counting references). A list of suggested topics will be provided, but students are also encouraged to come up with their own ideas. Nevertheless, I must approve all topics. The term paper will be based on the primary scientific literature. I will provide the due dates for steps (e.g. topic selection, outline and final draft) on the class.

An information sheet will be posted to Blackboard for each Assignment providing details about what is expected, what the grading criteria will be, and when the assignment is due. Also see the information in the course schedule at the end of the syllabus.

PREREQUISITES
BIOL3030 Cell Biology (minimum grade of C)

TECHNICAL SKILLS
To succeed in this course, it will be important for learners to possess the following technical skills:

1. Rename, delete, organize, and save files.
2. Create, edit, and format word processing and presentation documents.
3. Copy, paste, and use a URL or web address.
4. Send and receive email with attachments.
5. Locate and access information using a web search engine.

REQUIRED TEXTS AND MATERIALS

Readings will be assigned from the primary literature. PDFs of assigned documents will be posted on Blackboard.

TECHNOLOGY REQUIREMENTS

Browser Check Page

Students need to have access to a properly functioning computer throughout the semester. The Browser Check Page will enable you to perform a systems check on your browser, and to ensure that your browser settings are compatible with Blackboard, the course management system that hosts this course:
http://www.utdl.edu/utlv/Bb9BrowserCheck/innovation/blackboard/browsercheck.html

Software

Student computers need to be capable of running the latest versions of plug-ins, recent software and have the necessary tools to be kept free of viruses and spyware. The computer needs to run the following software, available in the Online Learning Download Center at http://www.utoledo.edu/dl/main/downloads.html:

- Word Processing Software
- Adobe Acrobat Reader
- Apple QuickTime Player
- Java Plugin Console
- Adobe Flash Player
- Adobe Shockwave Player
- Chrome Browser

Internet Service

High-speed Internet access is recommended as dial-up may be slow and limited in downloading information and completing online tests. This course does contain streaming audio and video content.

Use of Public Computers

If using a public library or other public access computer, please check to ensure that you will have access for the length of time required to complete tasks and tests. A list and schedule for on-campus computer labs is available at http://www.utoledo.edu/it/CS/Lab_hours.html.

UT Virtual Labs

Traditionally, on-campus labs have offered students the use of computer hardware and software they might not otherwise have access to. With UT's Virtual Lab, students can now access virtual machines loaded with all of the software they need to be successful using nothing more than a broadband Internet connection and a web browser. The virtual lab is open 24/7 and 365 days a year at http://www.utoledo.edu/it/VLab/Index.html.

COURSE POLICIES

- Please attend every class. The UT missed class policy is found at: http://www.utoledo.edu/policy/index.asp?id=87
- Please turn OFF cell phones while in the class.

- Disruptive behavior in the lecture room will not be tolerated. Please do not bring food into the room, although a drink is acceptable.
- Please read the UT policies on student conduct and academic dishonesty located at: http://www.utoledo.edu/policy/index.asp?id=235.
- **Plagiarism can justify failure in this course!!** Your writing must be in your own words. Your instructor can easily distinguish between student writing and professional-level writing as may be found in Review articles or Wikipedia pages. A routine part of grading will be to randomly Google snippets of the student's work, or any parts that appear suspicious using anti-plagiarism software. If you have cut-and-pasted material into your assignments (even with minor cosmetic changes), it will be discovered and dealt with muscularly. First offense: 0 for the assignment. Second offense: F in the course and report of plagiarism to University Administration. Don't do this!

GRADING POLICIES

Student work will be assessed as follows. Specific guidelines, grading criteria, and a timeframe for grades and feedback will be provided on the Assignment Information Sheet posted to Blackboard:

Evaluation

• Term Paper	30 points	30% of final grade
• In-class Presentation	20 points	20% of final grade
• Short written assignments	7-10 points each	30% of final grade
• Pop Quizzes	variable value	10% of final grade
• Class Participation/attendance		10% of final grade

Tentative Grading Scale:	85-100% A	60-64% C+
	80-84% A-	55-59% C
	75-79% B+	50-54% C-
	70-74% B	40-50% D
	65-69% B-	<40% F

Students are expected to complete and submit all assignments and tests by the due date listed on the Assignment Information Sheet. Late assignments or make-up quizzes will not be permitted unless arrangements are discussed and approved well before the required due date. Ask questions as soon as possible by email or by phone if you do not understand an assignment.

AMERICANS WITH DISABILITIES ACT

The Americans with Disabilities Act (ADA) requires that reasonable accommodations be provided for students with physical, sensory, cognitive, systemic, learning, and psychiatric disabilities. In accordance with the ADA and university policy, if you have a documented disability and require accommodations to obtain equal access in this course; please contact the instructor at the beginning of the semester to discuss any necessary accommodations. Please contact the Office of Academic Access for verification of eligibility at 419-530-4981 (voice) or 419-530-2612 (TDD).

COMMUNICATION GUIDELINES

Email:
Students are expected to check their UT email account frequently for important course information. This class is being taught for you, so if you are having trouble understanding any aspect of it, please let me know. I am here to help, and will do my best to respond to email within 24 to 48 hours.

TECHNICAL SUPPORT

If you encounter technical difficulties with Blackboard, please contact the UT Online Help Desk at (419) 530-8835 or utdl@utoledo.edu. The Help Desk offers extended hours in the evenings and on weekends to assist students with technical problems. When calling after hours, leave a detailed message, including your Rocket Number and phone number, and an Online Learning staff member will respond on the next business day. The UT Online Help Desk website is available at: http://www.utoledo.edu/dl/helpdesk/index.html

Technical questions related to on-campus Internet access, virtual labs, hardware, software, personal website hosting, and UTAD account management can be directed to UT's IT Help Desk at (419) 530-2400 or ithelpdesk@utoledo.edu. The IT Help Desk website is available at http://www.utoledo.edu/it/CS/HelpDesk.html.

LEARNER SUPPORT

The University of Toledo offers a wide range of academic and student support services that can help you succeed:

eTutoring Services
The Ohio eTutoring Collaborative, in partnership with The University of Toledo, now provides online tutoring support for all UT students. eTutoring Services are offered in a wide array of subjects, including Writing, Math, Calculus, Statistics, Accounting, Biology, Chemistry, and Anatomy and Physiology.
Learn more at: https://www.etutoring.org/login.cfm?institutionid=232&returnPage

eLibrary Services Portal
The eLibrary is a customized gateway to UT Libraries for online students. It was designed to help you locate the best online library resources without leaving Blackboard.
Learn more at: http://www.utoledo.edu/dl/students/elibrary.html

Office of Academic Access
The Office of Academic Access provides accommodations and support services to students with disabilities.
Learn more at: http://www.utoledo.edu/utlc/academicaccess/index.html

Counseling Center
The Counseling Center is the university's primary facility for personal counseling, psychotherapy, and psychological outreach and consultation services. The Counseling Center staff provide counseling (individual and group), mental health and wellness programming, and crisis intervention services to help students cope with the demands of college and to facilitate the development of life adjustment strategies.
Learn more at: http://www.utoledo.edu/studentaffairs/counseling/

Services for Online Students
Knowing what to do, when to do it, and who to contact can often be overwhelming for students on campus - even more so for distance learners. Visit the link below to learn more about the wide range of services for online students.
Learn more at: http://www.utoledo.edu/dl/students/student_serv.html

COURSE SCHEDULE (Subjected to changes)

Date	Topic
1/09	Introduction and organization – First day of the class
1/11	Scientific communication and writing
1/16	Martin Luther King Day-No class
1/18	How to search for literatures? – Online tools
1/23	Paper #1 – Analyzed by the instructor **Writing assignment 1:** Students will be assigned the # 2 paper
1/25	Paper #1 – Analyzed by the instructor
1/30	Paper #1 – Analyzed by the instructor
2/01	Paper #2 – Group-1 Student discussion - background and significance **Writing assignment 1 due** **Writing assignment 2:** Students will be assigned the # 3 paper
2/06	Paper #2 – Group-1 Student discussion -Results
2/08	Paper #2 – Group-1 Student discussion -Results
2/13	Paper #2 – Group-1 Student discussion -Interpretation
2/15	Paper #3 – Group-2 Student discussion -- background and significance **Writing assignment 2 due**
2/20	Paper #3 – Group-2 Student discussion –Results
2/22	Paper #3 – Group-2 Student discussion - Results
2/27	Paper #3 – Group-2 Student discussion -Interpretation
3/01	Neuroscience paper introduction **Writing assignment 3:** Students will be assigned the # 4 paper **Pick up a topic for the term paper.**
3/06	Spring break
3/08	Spring break
3/13	Paper #4 – Group-3 Student discussion -- background and significance **Writing assignment 3 due** **Writing assignment 4:** Students will be assigned the # 5 paper
3/15	Paper #4 – Group-3 Student discussion –Results **Return the outline of the term paper**
3/20	Paper #4 – Group-3 Student discussion –Results
3/22	Paper #4 – Group-3 Student discussion -Interpretation
3/27	Paper #5 – Group-4 Student discussion -- background and significance **Writing assignment 4 due**
3/29	Paper #5 – Group-4 Student discussion –Results
4/03	Paper #5 – Group-4 Student discussion –Results and Interpretation
4/05	How to submit your paper? - Endnote How to prepare a presentation?
4/10	Field Test
4/12	Field Test
4/17	Presentation -1 each for 15 mins – 5 students
4/19	Presentation -2 each for 15 mins – 5 students
4/24	Presentation -3 each for 15 mins – 6 students- Last day of the class **Term paper due**
4/26	No class- Instructor serving on AHA study section
5/01	Final exams week