

**BSC 301 – BIOLOGICAL LITERATURE (CRN: 22981)
Spring 2012**

Credit Hours: 3 + 0, (Lectures)

Tue and Thu 8.00 – 9.15 AM @ McDowell Administration, Room # 243

eCompanion Site: eCollege @ MyLeo

Instructors:

Dr. Venugopalan Cheriyaath

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Course Description:

This course provides students with the fundamentals of scientific thinking and scientific writing. The course starts with a brief description of literature searches, then reading and writing scientific papers and writing lab reports. Then there is an overview of the history and philosophy of science as it pertains to biology. Students will learn about empiricism, parsimony, and how to apply the scientific method to developing and testing hypotheses. Students will be taught how to write in scientific style; naming conventions, how to cite scientific names, how to avoid obfuscatory scribbling, establishing flow, organizing a scientific document, how to write an abstract, how to present scientific data and statistics, how to cite figures and tables, how to cite scientific sources, and how to avoid plagiarism. The final part of this class deals with bioethics and the use of ethics in biological research

Attendance and Absences:

You are expected to attend **ALL** scheduled lectures and turn in assignments as scheduled. Assignments will **NOT** be accepted late. You will be held responsible for all information

covered in lecture. Sign-in sheets will be circulated; please sign your name clearly. Do not sign anyone's name but your own! Signing in for someone else is a form of academic dishonesty and will not be tolerated. Excessive unexcused absences will result in loss of points from your grade. **For each five unexcused absences a reduction of ten (10) points will be subtracted from your final grade.**

Topic Outline:

Weeks 1 -2 (Dr. Choi):

1. Developing a Literature Search Strategy (Dr. Choi)

- a. Database and Search Engines for Scientific Literature
- b. Comparison of databases
- c. Database Search Strategies
- d. Evaluating Search Results
- e. Managing References (Citations)

(Homework: Choose a primary article)

2. Reading and Writing Scientific Papers (Dr. Choi)

- a. Types and Hallmarks of Scientific Writing
- b. Format
- c. Documenting References
- d. Strategies for Reading Journal Articles
- e. Plagiarism
- f. Benefits

(Homework: Re-write the abstract and introduction in your own words)

3. Preparing a Laboratory Report (Dr. Choi)

- a. Timetable
- b. Getting Started
- c. Starting with Materials and Methods Section
- d. Results Section
- e. Make Correction
- f. Documenting Sources

(Homework: Re-write the materials and methods as well as ONE set of results)

Weeks 3 -5 (Dr. Slovak)

History and Philosophy of Science with emphasis on Biology –

An introduction to logic and scientific thinking

(Homework: Four Pages Essay on the History and philosophy of science)

Week 6 (Dr. Kopachena)

Biological Nomenclature

- a. Classification – what is a species? How do you use the word species
- b. Binomial nomenclature
- i. Authorship, synonyms
 - ii. Capitalization, italic vs underline
- c. Conventions in names of biologically relevant chemicals
- d. Latin roots (singular vs plurals)

(Homework: Biological Nomenclature)

Weeks 7 (Dr. Cheriya)

Hypothesis Testing – Principle of Parsimony (Occam's Razor)

(Homework: Write a Hypothesis)

Weeks 8 - 9 (Dr. Kopachena and Dr. Cheriya)

1. Scientific Writing styles and editing scientific papers (Dr. Kopachena)
 - a. Fonts, paragraphs, spacing
 - b. Simple grammatical rules: split infinitives, dangling participles, prepositions, passive vs. active voice
 - c. Sentence: run-ons and fragments
 - d. Obfuscatory scribbling and jargon
 - e. Establishing flow (creating an outline)
 - f. Prioritizing information (move from general to specific)
 - g. Headings
 - h. Citing instruments and materials used in experiments

(Homework: Editing a paper)

2. How to present data (Dr. Cheriya)
 - a. Figures and tables from published sources
 - b. Data management and spreadsheets
 - c. Figures and tables from original sources

(Homework: Figures and Tables)

3. How to write a discussion – not just a restatement of results (Dr. Cheriya)

(Homework: Re-write the discussion matching the one-set results).

Week 10 (Library tour; Dr. Cheriya)

Literature searching

- a. What is primary source literature? (what are good sources of scientific information?)
- b. How to search databases and internet

Week 11 (Dr. Choi)

How to cite references

- a. Avoiding plagiarism by using citations
- b. Avoid using quotes
- c. Avoid citing papers based solely on citation by others

(Homework: Citations)

Week 12 (Dr. Lyman-Henley)

Bioethics and ethics in research

(Homework: Ethics Assignment)

Week 13 - 14 (Dr. Lyman-Henley)

Presentations

Week 15-16 (All)

Bioethics Debates

(Homework: Class Debate: written summary and presentation)

!!! All dates and assignments are tentative and may subject to change. !!!

Course Materials:

This is a web enhanced course. Course material may be accessed on eCollege in its eCompanion site at eCollege.

Homework assignments:

Your grading is mainly based on your homework assignments and attendance. You are required to submit all your assignments via drop box in its eCompanion site. It's your responsibility to find a matching dropbox on eCollege for each assignment and upload your homework in timely manner. Submitted documents must be in .rtf, .doc or .docx format; therefore, Microsoft Office is needed.

Grading Scheme and Assignments: (Percentages)

Attendance	20
Homework Assignment: Find a primary article	5
Homework Assignment: Writing an Abstract	5
Homework Assignment: Writing M & M and Results	5
Essay: History and philosophy of science (4 pages)	10
Homework Assignment: Biological Nomenclature	5
Homework Assignment: Review Essay	10
Homework Assignment: Editing a paper	5
Homework Assignment: Figures and Tables	5
Homework Assignment: Writing Discussion	5
Homework Assignment: Citations	5
Homework Assignment: Ethics Assignment	5
Class Debate: Written summary	10
Class Debate: Presentation	5

Total 100

Textbook:

Knisely, K. 2009. A Student Handbook for Writing in Biology.3rd Edition. Sinauer Associates/W.H. Freeman and Co. ISBN-13: 978-1-4292-3491-7

Additional course resource:

Pechenik, J. A. 2009. A Short Guide to Writing about Biology.6th/7th Edition. Pearson. ISBN-13: 978-0-205-66727-7

Academic Honesty:

All students are expected to maintain high standards of integrity and honesty in all academic work. Conduct that violates the accepted standards of academic honesty (as described in the Student's Guidebook), which includes cheating and plagiarism, will result in a grade of F in the course. Plagiarism is a criminal activity. You must cite all sources of information. Copying of material, whether, whether parts of sentences, whole sentences, paragraphs, or entire articles, will result in a grade of F for the class and can result in further disciplinary action.

Classroom Behavior:

"All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environ-ment." (Student's Guide Handbook, Policies and Procedures, Conduct)

Early Intervention:

Early intervention for freshmen is designed to communicate the University's interest in their success and a willingness to participate fully to help students accomplish their academic objectives. The university through faculty advisors and mentors will assist students who may be experiencing difficulty to focus on improvement and course completion. This process will allow students to be knowledgeable about their academic progress early in the semester and will provide faculty and staff with useful data for assisting students and enhancing

retention. Grade reports will be mailed by the end of the sixth week of the semester (<http://web.tamuccommerce.edu/academics/universityCollege/successCoaches/default.aspx>)

Students with Disabilities:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Gee Library, Room 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamuc-commerce.edu