BSC 301 – BIOLOGICAL LITERATURE (CRN: 20484)

Spring 2015

Credit Hours: 3 (Lectures)

Tue and Thu 8.00 – 9.15 AM, McDowell Administration Building,
Room # BA 245

eCompanion site: eCollege @ MyLeo

Instructors:

Dr. Izhar Khan – Instructor on Record
Office: Science 215
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Email: Venu.Cheriyath@tamuc.edu
Home Page: http://sites.tamuc.edu/vcheriyath/

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Phone: (903) 886-5221
Office Hours: Mon & Wed – 1-3 PM
Email: DongWon.Choi@tamuc.edu

Dr. Johanna Delgado-Acevedo
Office: Science 262
Phone: 903-468-3333
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Kodeeswaran Parameshwaran, Ph.D.
Office: Science 201
Phone: 903-468-8648
Office Hours: Tue and Thu – 3-5 PM
Email: KParameshwaran@tamuc.edu
Dr. John P. Slovak  
Office: Science 231  
Phone: 903-886-5368  
Office Hours: Mon, Wed & Fri – 11 AM-12 PM & 1-2 PM, Tue – 1-2 PM  
Email: John.Slovak@tamuc.edu

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 scrivenry, 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.

Textbook (Recommended but not Required)

Additional course resource:

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 UNEXCUSED ABSENCE TWO (2) POINTS WILL BE SUBTRACTED FROM YOUR ATTENDANCE GRADE.
Course Schedule

Weeks 1-2 (Jan 20th – 30th) – Dr. Choi

1. Developing a Literature Search Strategy (Dr. Choi)
   - Database and Search Engines for Scientific Literature
   - Comparison of databases
   - Database Search Strategies
   - Evaluating Search Results
   - Managing References (Citations)
   (Homework: Literature search)

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 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 matching results)
Weeks 3 -5 (Feb 2nd – 20th) – 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 (Feb 23rd – 27th) – Dr. Parameshwaran
1. 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 (Mar 2nd – 6th) – Dr. Cheriyath
1. Hypothesis Testing – Principle of Parsimony (Occam’s Razor)

   (Homework: Write a Hypothesis)

Week 8 (Mar 9th – 13th) – Dr. Parameshwaran
2. Scientific Writing Styles and Editing Scientific Papers
   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 scrivenry 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)
Week 9 (Mar 23rd – 27th) – Dr. Cheriyath  
2. How to Present Data  
   a. Figures and tables from published sources  
   b. Data management and spreadsheets  
   c. Figures and tables from original sources  
(Homework: Write Results)

3. How to Write a Discussion – Not Just a Restatement of Results  
(Homework: Write Discussion).

Weeks 10 & 11 (Mar 30th – Apr 10th) – Dr. Khan  
1. Literature Search  
   a. What is primary source of literature?  
   b. What are good sources of scientific information  
   c. How to search databases and interent  
   d. Citation management tools, e.g. Endnote

2. How to Cite References (Citation-Sequence and Name-Year Systems)  
   a. Avoiding plagiarism by using citations  
   b. Avoid using quotes  
   c. Avoid citing papers based solely on citation by others  
(Homework: Citations)

Week 12 (Apr 13th – 17th) – Dr. Delgado-Acevedo  
1. Bioethics and Ethics in Research  
   (Homework: Ethics Assignment)

Week 13 (Apr 20th – 24th) – Dr. Delgado-Acevedo  
2. Presentations

Week 14-15 (April 27th – May 8th) – All  
3. Bioethics Debates  
   (Homework: Class Debate presentation)
All dates and assignments are tentative and may be subject to change.

Course Materials:
This is a web enhanced course. Course materials may be accessed on the eCompanion site of the course in eCollege.

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

Grading Scheme and Assignments:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
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<tbody>
<tr>
<td>Attendance</td>
<td>20</td>
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<tr>
<td>Homework Assignment: Find a primary article</td>
<td>6</td>
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<tr>
<td>Homework Assignment: Writing an Abstract</td>
<td>6</td>
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<td>Homework Assignment: Writing M &amp; M and Results</td>
<td>6</td>
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<tr>
<td>Essay: History and philosophy of science (4 pages)</td>
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<td>Homework Assignment: Biological Nomenclature</td>
<td>6</td>
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<td>Homework Assignment: Wring a Hypothesis</td>
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<td>Homework Assignment: Editing a paper</td>
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<td>Homework Assignment: Figures and Tables</td>
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<td>Homework Assignment: Writing Discussion</td>
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<td>Homework Assignment: Citations</td>
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<td>Homework Assignment: Ethics Assignment</td>
<td>6</td>
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<tr>
<td>Class Debate: Presentation</td>
<td>10</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
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Grading Scale:

<table>
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<tr>
<th>Grade</th>
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<tr>
<td>A</td>
<td>90% or above</td>
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<tr>
<td>B</td>
<td>80% - 89%</td>
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<td>C</td>
<td>70% - 79%</td>
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<td>D</td>
<td>60% - 69%</td>
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<td>F</td>
<td>&lt;60%</td>
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**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 environment.” (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. Additional information about first time undergraduates is available at [http://www.tamuc.edu/academics/universityCollege/successCoaches/default.aspx](http://www.tamuc.edu/academics/universityCollege/successCoaches/default.aspx)

**Nondiscrimination Statement:**

A&M-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.
**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.edu