**BIOL 416 Group Seminar assignment 2019**

This exercise is aimed at familiarizing you with how to access, synthesize and present both general and primary scientific information on an issue or concept in terrestrial ecosystem ecology. Working in pairs, you will prepare and deliver a seminar on some aspect that particularly interests you both.

The most critical part of the whole exercise, and the key to a successful seminar, is to identify a clear and specific overall seminar thematic question that you would like to address. You will need to be creative and think carefully about your chosen question. Seminar questions should be constructed so that they are likely to lead to focussed, intelligent discussion that will move the seminar convenors and audience toward some potential answer, or toward a more refined perspective on the issue/theme, or toward an even more refined question. Expect to make several iterations of it as you read about the topic and develop your thinking and understanding of the issue involved. In many ways, formulating a good, clear, concise, challenging and original question is the most difficult part of the whole exercise, but it is also the most interesting and creative part, and once achieved, should make for a very effective seminar. As you prepare, I am happy to meet with each group to help you refine your question. Please allow plenty of time (e.g. a week) for this part of the exercise.

Your ultimate goal as seminar convenors is to excite interest in your topic so that your audience will be fully engaged and keen to discuss the ideas you raise, and therefore that they will leave the seminar afterwards with a much better understanding of the specific seminar question you have focused on, and how it relates to the overall context of terrestrial ecosystem ecology.

**Learning Objectives:**

1. Consult the science literature and devise an effective seminar question that synthesizes the current status of an issue in terrestrial ecosystem ecology that particularly interests you.

2. Search the primary scientific literature for a significant example or 'case study' of research on that terrestrial ecosystem ecology issue.

3. Identify the hypothesis that was actually tested in the primary research paper.

4. Critically assess that research (positive and negative aspects).

5. Evaluate the contribution of that research to our understanding of the terrestrial ecosystem ecology issue.

6. Develop oral presentation skills, particularly discussion leadership.

**Seminar Exercise:**

Identify a terrestrial ecosystem ecological issue that is of particular interest to you. Consult the scientific literature and synthesize the current status of that issue. You may find the textbook and the websites and list of highly recommended papers listed in the References list (and the citations in those papers) useful as a starting point in reviewing the general terrestrial ecosystem ecology literature. Formulate your chosen issue into a question that you can use your literature research and seminar to make some progress toward answering. Search the primary literature (i.e. sources that present original research data – see recommended list of journals in the References list) for a relevant article which you will ask your audience to read beforehand that you will use as an example or case study. Note that your seminar question should have a broader focus than the individual research paper. In other words, the paper will not provide a comprehensive answer to your question, but will contribute to moving us toward an answer. You are encouraged to use evidence from other readings to supplement the chosen seminar paper. You might find it helpful to look at the kinds of questions students have developed in previous versions of this course (e.g. BIOL 416 website), but remember that these were for different overall course themes.

Make an oral presentation (that would total ~20 minutes for a conventional ‘talk’, but that will actually last much longer because it will be interspersed with multiple question and answer and discussion sections), aimed at stimulating ideas and debate. The presentation should be suitable for an interested public audience, and should include the following headings (which should be divided among group members):

a) The terrestrial ecosystem ecology issue: Introduction covering the scientific concepts and background underlying the issue, and its historical context. Present your seminar question - Make sure to write it up very clearly in your title slide, and possibly again later. In addition, please write it up on the white board. Explain why you chose it.

b) Research paper introduction: Introduce the primary research study that you are using as an example. Specifically refer back to concepts presented in Paul’s initial course seminars where appropriate. Describe the study's focus by identifying and articulating the specific hypotheses that you think *were actually tested by the data* reported in the paper.

c) Research paper results: Outline the experimental approach briefly, and present a summary of the study's main results (e.g. perhaps 1-3 of the core graphs or tables – no more).

d) Research paper assessment: Critical assessment of the study's main results and conclusions. This component should contain both positive and negative aspects, and should identify and evaluate any assumptions underlying the study.

e) Research paper context: Evaluation of the study's contribution to the terrestrial ecosystem ecology issue.

f) The future: Finish your seminar by summarizing your conclusions on the seminar question you have posed. Be sure to include a synopsis of what you have learnt from your seminar audience as well. Finally, offer some conclusions on the future importance and development of your chosen ecosystem ecology issue within the broader context of the course theme.

Note that the main objective of this exercise is the process of synthesizing information on an issue, and critically evaluating a primary research source from the scientific literature. You are not expected to understand (or present) the fine detail of the results and data analyses from your chosen primary research paper. Concentrate on the main points and big issues. Use the paper as a spring-board to highlight your chosen terrestrial ecosystem issue. The more interactive and discussion-based the seminar is, the better.

**Seminar convenors:**

Seminar convenors will be graded as a group (50% of the total mark) according to the following criteria:

i) **quality of the seminar question** – clarity, focus, intellectually stimulating, creativity

ii) **development of that question** during the seminar using evidence from the chosen reading, and other sources, and linkages to concepts presented in Paul’s initial seminars

iii) **presentation structure and clarity**

iv) **synopsis** at the end of the seminar

Individual seminar convenors will be graded separately (50% of the total mark) on each of their presentations according to the following criteria:

v) **evidence of independent critical thinking** (e.g. identifying the actual hypothesis tested in the primary research paper; identifying other issues/arguments and critiquing them), **and original ideas**

vi) **enthusiasm and creativity in presentation**

vi) **audience engagement and discussion leadership**

Note the above very carefully - They tell you what I am looking for.

**Seminar participants:**

The success of this course as a learning instrument will largely depend on the quality of the discussions in each seminar. The main objective is to encourage the thinking processes of identifying and assessing some of the major cutting-edge issues in terrestrial ecosystem ecology that fit within the course thematic question. Initiation and participation in the discussions following each seminar is a critically important part of the learning process in this course. Please read the research paper circulated prior to each seminar, and come prepared with a typed (hardcopy) relevant discussion idea or question relating to the ecosystem ecology issue in general, or to the chosen research paper, or some combination of the two. These questions will be graded by the convenors and the course instructor on the basis of their quality (i.e. their perceptiveness and relevance).

The overall question and possible readings that you are considering using for your seminar should be sent to me in time (at least 10 days prior to your seminar) so that we can schedule a meeting where I can assess the question and the possible papers and provide feedback. The earlier you send them to me, the more feedback I will be able to provide. If you are having difficulties, please contact me. Finally, note that I am very keen to support individual approaches in this course, so if you have other suggestions of how you would like to do your seminar (e.g. role plays, debate…), please contact me.