

**From:** [Breitenberger, Caroline](#)  
**To:** [Larsen, Clark S.](#)  
**Cc:** [Vankeerbergen, Bernadette](#); [Haddad, Deborah](#); [McGraw, William S.](#)  
**Subject:** RE: Anthropology 3211, Introduction to Forensic Science, GE status (Natural Science - Biological Science)  
**Date:** Wednesday, April 23, 2014 7:16:24 PM  
**Attachments:** [image001.png](#)

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Dear Clark,

I apologize for the belated response to your request for concurrence for Anthropology 3211, Introduction to Forensic Science, to be approved as a Natural Science-Biological Science GE course. I concur with this course to count for the Biological Science category of the GE, however, I do not do so enthusiastically. While I think the course has a reasonable amount of general science content, and may meet some of our other GE goals, I think it fails to address many core concepts that are considered essential for 21st century biological literacy. In my opinion, it is important that all of these concepts be included in a GE biological science course, although some could be covered in more depth than others.

The consensus concepts that are essential for biological literacy are described in the AAAS Vision and Change report at:

<http://visionandchange.org/files/2013/11/aaas-VISchange-web1113.pdf>

These concepts, and the extent to which they are likely to be covered in this course, are:

- Evolution – possibly some minimal coverage; no coverage of adaptation, natural selection, and genetic drift
- Structure and Function – structure of DNA included, and perhaps incidental structural aspects of proteins, lipids, carbohydrates and hormones, but little with respect to the function of these molecules in living organisms
- Information Flow, Exchange, and Storage – DNA structure and basics of Mendelian inheritance probably included, but no coverage of gene structure, transcription, translation, regulation of gene expression, signalling, relationships between genotype and phenotype
- Pathways and Transformations of Energy and Matter – some nutrient cycling may be briefly mentioned in the context of postmortem interval assessment; otherwise, coverage of this concept is likely to be minimal or nonexistent
- Systems – minimally addressed in 1 lecture that includes insect taxonomy and succession, otherwise not covered; no coverage of emergent properties, or aspects of the interconnectedness among living things

Overall, this course aligns well with some GE learning outcomes but is deficient in others:

1. Students understand the basic facts, principles, theories and methods of modern science.

**Many basic biological facts, principles, theories (bundled into “key concepts” above) are missing**

Methods for studying biological systems are addressed

2. Students understand key events in the development of science and recognize that science is an evolving body of knowledge.

History of forensic science, and possibly the discovery of DNA structure and history of genome analysis are likely to be covered

**Many key events in history of biological science are not covered (specifically, those that led to our current understanding of the “key concepts” above)**

Science as an evolving body of knowledge is likely to be effectively covered throughout the course

3. Students describe the inter-dependence of scientific and technological developments.

This outcome is integrated throughout the course

4. Students recognize social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

This outcome is covered, but only for one specific problem. I consider “problems of the contemporary world” to be things like conservation, human and animal wellness, population growth, food shortages, climate change, etc., not just analysis of past events.

I would add that some of the lectures that are marked as “dealing directly with biology” do not do so. For example, analysis of blood spots might require a very basic understanding of the human circulation system, but no other biology; many of the lectures “dealing indirectly with biology” have limited relevance from a GE perspective: biology of fingerprints, biology of firearm wounds, biology of voice stress analysis, biology of trauma analysis, etc. are at best esoteric aspects of biology that would not lead to a deeper understanding of any of the core biological concepts listed above.

On the whole, it is clear that this is an excellent course for students interested in forensic science, that it strongly reinforces the interdisciplinary nature of science today, and that students taking this course would learn much about the process of science, scientific reasoning, and the interactions between science and technology. My hope is that the positives about the course could offset its major deficiencies in content.

Regards,  
Caroline



**Caroline Breitenberger**

Director, Center for Life Sciences Education

Associate Professor, Chemistry and Biochemistry

College of Arts and Sciences

260P Jennings Hall, 1735 Neil Ave., Columbus, OH 43210

614-292-6945 Office / 614-292-4390 Fax

[breitenberger.1@osu.edu](mailto:breitenberger.1@osu.edu) [clse.osu.edu](http://clse.osu.edu) 

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**From:** Larsen, Clark

**Sent:** Wednesday, February 26, 2014 2:10 PM

**To:** Breitenberger, Caroline

**Cc:** Vankeerbergen, Bernadette; Haddad, Deborah; McGraw, Scott

**Subject:** Anthropology 3211, Introduction to Forensic Science, GE status (Natural Science - Biological Science)

Dear Caroline,

The Department of Anthropology submitted a request for Natural Science-Biological Science GE status for Anthropology 3211, Introduction to Forensic Science. Bernadette Vankeerbergen, Program Manager for ASC Curriculum Assessment, raised four concerns regarding the course and our GE status request. Attached please find two documents: (1) the responses to the concerns (pp. 1-3) and the body of the request and accompanying materials (pp. 4-10), and (2) the course syllabus. Dr. Vankeerbergen asked that we resubmit our GE request, addressing the concerns, along with a concurrence from you. Would you be willing to write a concurrence and email it to me so that we can resubmit our request?

By the way, this is actually the third time that I have submitted this to you. However, for the first two attempts, I either had an incorrect email address for you or it ended up somewhere else, which I just discovered this afternoon.

In advance, many thanks for your attention to this important curricular matter.

Best regards,

Clark

Clark Spencer Larsen  
Distinguished Professor of Social and Behavioral Sciences  
Chair, Department of Anthropology

Dr. Clark Spencer Larsen  
Department of Anthropology  
4034 Smith Laboratory, 174 W. 18<sup>th</sup> Avenue

The Ohio State University  
Columbus, OH 43210-1106

Phone: 614-292-4117

Fax: 614-292-4155

Email: [Larsen.53@osu.edu](mailto:Larsen.53@osu.edu)

OSU Department of Anthropology: <http://anthropology.osu.edu/>

Bioarchaeology Research Laboratory: <http://anthropology.osu.edu/bioarch/index.htm>