Stream Ecology Fall

INSTRUCTOR

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MEETINGS:

Lecture – Tuesday & Thursday 10:30-11:45, AGH

OBJECTIVES:

1. Identify the physical and chemical properties of and processes in streams.
2. Understand adaptations of biota for life in flowing waters.
3. Examine ecological processes and theories pertinent to stream ecosystems.
4. Understand the influence of human activities on streams and rivers.

READINGS:

Most readings will come from the peer-reviewed literature and will be assigned in advance of each class period. Readings will include the following topics: importance of spatial and temporal scales, river continuum concept, organic matter processing, nutrient spiralling, patch dynamics, disturbance, secondary production, functional groups, stream classification, flood pulse, hyporheic zone, stream geomorphology relative to stream organisms, sediment transport, effects of land use on aquatic biota, and several management-related topics (e.g., instream flows, stream restoration, index of biological integrity).

EXAMS & ASSIGNMENTS:

- Mid-term exam and final comprehensive exam
- Each student will lead 2-3 class discussions during the semester
- Each student will write a review on a topic relevant to stream ecology.
- Quizzes may be given on various subjects throughout the semester depending on the level of participation during discussions.
This is a graduate course and much of the learning will take place through discussion between students. Each student will be in charge of guiding the conversations for two or three class periods (MS students- 2 classes; PhD students- 3 classes). You should prepare questions to guide the discussion. You should also manage the conversational process – ask follow-up questions, keep the conversation on track, and so forth. Each student will be graded on leading class discussions as well as their participation in these discussions. Discussion leaders will be graded on the presentation of the material, accuracy of the information provided, whether the information was placed in context of other course material/research, and general insightfulness related to the subject matter. Discussion participators will be graded at each event and classified using the following criteria: general comments made that did not detract from the subject; comments related to the subject and linked to other concepts and studies; and

**Placing the readings in context**
1. Link the readings to current issues
2. Link the readings to other readings
3. Identify genealogies of ideas
4. Relate to schools of thought

For discussions, it is often useful to start with “the basics” to make sure everyone in class has a good grasp of the readings, and then move on to questions that address application, analysis, and so forth. You are encouraged to bring information from outside readings that are applicable to the topic being discussed (please ensure it relates to your topic!).