IST 323 sec.201– Assessment II: Aquatic Ecology 4 hrs

CRN 3394 Spring 2014

Lecture 11:00 am – 12:15 pm TR room: ML 122

Laboratory 4 pm to 5:50 room: ML G31

**Instructor:**

Thomas G. Jones

Office: Morrow G 115 E-Mail: [Jonest@Marshall.edu](mailto:Jonest@Marshall.edu) Cell phone: 389-5832

**Required Text:**

Stream Ecology: Structure and function of running waters. J. David Allan 1995

ISBN 0 412 35530 2 (paperback) (reprinted 2004)

~$70

Pocketguide to Eastern Streams. T. Travis and Shanda Brown. 2011.

ISBN 978-0-8117-064-7

~$10

**Course Description:**

Use of scientific procedures and current technology to characterize and quantify sensitive elements of aquatic ecosystems and to assess human impact on the system.

**Course Student Learning Outcomes and Assessment Measures:**

|  |  |  |
| --- | --- | --- |
| Course Student Learning Outcome | How Practiced in this Class | How Assessed in this Course |
| Students will utilize GIS and other technologies to map, assess, and interpret flowing freshwaters | Class lecture (CL), Hands on examples and discussion (HOED) | Class projects & presentation |
| Students will develop the base knowledge of both abiotic and biotic factors important in stream function | CL, HOED | Class projects, presentation, quizzes & exams |
| Students will be able to indentify algae, benthic invertebrates, and fishes at a basic level | CL, HOED | Class projects, presentation, quizzes & exams |
| Students will be able to measure abiotic parameters using current technologies and techniques | CL, HOED | Class projects, presentation, quizzes & exams |
| Students will learn the accepted techniques for collecting algae, bacteria, benthic invertebrates, and fishes from a wide variety of stream types. | CL, HOED | Class projects, presentation, quizzes & exams |
| Students will utilize basic statistical techniques to collect, analyze, and present data | CL, HOED | Class projects & presentation |
| Students using current media methods, will present basic information to an audience | CL, HOED | Class projects & presentation |

**Laboratory topics include**

Using GPS and GIS to map stream habitats

Identification of algae, benthic invertebrates and fishes

Water quality testing using newest technologies

Electrofishing using backpack shocker, barge shocker, and boat shocking

Sampling *Coliform* bacteria using Coliert system

Collecting fishes using seines, gill nets, larval light traps and hoop traps

Sampling benthic invertebrates using a wide variety of gear

**Class Attendance:** In this course the instructor will require active participation of each student during each class meeting. Class participation points and homework will only be accepted late, when accompanied with appropriate documentation. By missing class you will not be able to participate in class discussions and the class will not benefit from your ideas and comments. If you are absent, you must contact the professor as soon as possible.

**Students with Disabilities:** Marshall University is committed to equal opportunity in education for all students, including those with physical, learning and psychological disabilities.  University policy states that it is the responsibility of students with disabilities to contact the Office of Disabled Student Services (DSS) in Prichard Hall 117, phone 304 696-2271 to provide documentation of their disability.  Following this, the DSS Coordinator will send a letter to each of the student’s instructors outlining the academic accommodation he/she will need to ensure equality in classroom experiences, outside assignment, testing and grading.  The instructor and student will meet to discuss how the accommodation(s) requested will be provided.  For more information, please visit <http://www.marshall.edu/disabled> or contact Disabled Student Services Office at Prichard Hall 11, phone 304-696-2271.”

The reason for this request is so that students with disabilities understand both their rights and responsibilities regarding requesting accommodations.

**Policy on Academic Dishonesty:** I take cheating very seriously. I will follow the student handbook on definitions and actions precisely.

**Other Policies:**

By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy be going to [www.marshall.edu/academic-affairs](http://www.marshall.edu/academic-affairs) and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to <http://www.marshall.edu/academic-affairs/?page_id=802>

Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment

“Wednesday, April 3 is Assessment Day. The hours of 8:00 – 4:00 are set aside for university assessment activities. All seniors graduating in May, summer, or December of 2013 should be present from 10:00 – 11:30 to complete a senior assessment. A free lunch on the MSC Plaza will follow immediately afterward. Students other than graduating seniors should check with their departments for Assessment Day schedules.”

**Requirements:**

Assignments Possible Points

Class Participation 200 pts

Identification tests 300 pts

Group Presentation 200 pts

Reading Quizzes 100 pts

Knowledge Celebration 1 100 pts

Knowledge Celebration 2 100 pts

Total: 1000 pts

**Assignment Details:**

1) Points for class participation come from a series of small tasks assigned during class time. These brief projects will be submitted via email.

2) Three identification tests covering algae, benthic invertebrates, and fishes.

3) Students will form groups of 3 to present a 20 minute multimedia presentation for the class based on their field project. Topics will be verified with the professor. No repeat topics. “First Come…First Serve” on topics so turn them in early! Each student must speak for a minimum of 5 minutes.

5) Most classes will begin with a simple 10 point quiz on the reading materials assigned. The goals of these quizzes are to inform students on their current retention of assigned readings and to introduce topics for discussion.

6) Two knowledge celebrations “written exams” will be given. The first exam will be given at midterm and the second as a final.

**Grading Scale:**

90% - 100% = A

80% - 89% = B

**Office Hours**

Tuesday 8:00 am to 9:15 am and 2:30 to 3:30 pm; Wednesday 1 pm to 5 pm if scheduled ahead of time; Thursday 2 pm to 5 pm

**Schedule**

|  |  |  |
| --- | --- | --- |
| Topics: Week | Subject | Readings |
| Week 1 Jan 14 | Introduction | Syllabus |
| week 2 Jan 21 | Stream Structure | Chapter 1 Channels and Flow |
| week 3 Jan 28 | Stream Structure | Chapter 2 Stream water Chemistry |
| week 4 Feb 4 | Stream Structure | Chapter 3 Physical factors of importance to the biota |
| week 5 Feb 11 | Feeding groups | Chapter 4 Autotrophs  **Algae identification test during lab** |
| week 6 Feb 18 | Modification of rivers | Chapter 14 Modification of running water by humankind |
| week 7 Feb 25 | Feeding groups | Chapter 5 Heterotrophic energy sources |
| week 8 Mar 4 | **Midterm**  Chapters 1 – 5 & 14 | Chapter 6 Trophic relationships |
| week 9 Mar 11 | Work on projects as small group, predation | Chapter 7 Predation and its consequences |
| week 10 Mar 18 | **No class this week** | **Spring Break** |
| week 11 Mar 25 | Species interaction | Chapter 8 Herbivory |
| week 12 April 1 | Species interaction | Chapter 9 Competitive interactions  **Benthic Invertebrates identification test during lab** |
| week 13 April 8 | Drift | Chapter 10 Drift |
| week 14 April 15 | Survey of stream types | Chapter 11 Lotic communities |
| week 15 April 22 | Energy | Chapters 12 Organic matter in lotic ecosystems |
| Week 16 April 28 | Energy | Chapter 13 Nutrient dynamics  **Fish identification test during lab** |
| Week 17 May 6 | **Final week**  Chapters 6-13 | Final exam May 8th 10:15 – 12:15 |