**NR 12-Watershed Ecology**

Reedley College- Spring 2012 CR#50354

Room FEM 8

Lecture Tuesday 8:00 am to 8:50 am.

Lab Tuesday 9:00 am to 11:50 am.

**Instructor:** Ian Stone

Office: FEM 10, Phone (559) 638-3641, Ext. 3260 Email: ian.stone@reeldeycollege.edu

Office Hours: Thurs. 11:00 am to 12:00 noon and 3:00 to 4:00 pm, Mon. 2:00 to 3:00 pm.

Other time by appointment

**Course Objectives:**

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| Upon completion of this course, students will be able to: |
| 1. Students will distinguish the identity of aquatic species and ecosystem components to properly respond to management directives in for the watershed. 2. Students will be able to analyze and respond to natural and human-induced disturbances to achieve the desired outcomes indicated by their supervisor. 3. Students will apply the necessary skills to assist the supervisor with data collection, scientific analysis, and to prepare basic reports. 4. Students will understand and differentiate biological or environmental factors that affect forest growth and development and they will be able to apply those principles to meet daily management objectives. |

**Course Outcomes:**

1. Students will recognize historic, political, and economical perspectives of aquatic resources.
2. Students will understand the effects that vegetation management such as grazing and timber harvest has on water quality and water quality.
3. Students will interpret data to determine water quality for fish habitat, potability, and agricultural utilization.
4. Students will prepare and deliver an oral presentation of management alternatives for watershed improvement.
5. Students will understand the hydrologic cycle including physical processes, storage, and transport.
6. Students will operate aquatic monitoring equipment and record data in a field setting.
7. Students will describe the geomorphology and history of human influence on the Sierran Aquatic systems.

**Attendance and Drop Policy:**

Class attendance is essential for students to be successful in any course. Therefore, it is essential that students attend all lectures and labs and labs; however, students are not graded on attendance. Due to the limited number of seats in the class, and the high demand, students who miss the first class meeting will be promptly dropped. Students must stay in class for the entire period to be counted as present. Students absent from three or more class meetings (lecture or lab) without a recognized excuse will be dropped from the course.

It is a student’s responsibility to drop the course if they no longer wish to be enrolled in the course. Failure to do so could result in a student receiving a failing grade in the course or being dropped by the instructor for failure to attend.

**Absence Policy**

The only excused absences that will be recognized are personal illness, medical emergency, family emergencies, a death in the immediate family (parent, sibling, grandparent), and professional development (i.e. professional meetings, job interviews). For these excuses to be recognized students must provide appropriate documentation. Personal illness and medical emergencies requires verification by a physician (doctor’s excuse) or the college nurse. Medical issues are private, and if a student wishes he or she can provide documentation of the illness to the college nurse and have the nurse send verification to the instructor to assure medical issues remain private. For family emergency students should provide some documentation from their immediate family detailing the emergency and why the student should be excused. For a death in the immediate family students should provide the instructor with a copy of the obituary. For professional development students must provide documentation that they attended the event (for example a letter from an advisor, e-mail confirming the job interview, etc.) Recognition of the excuse is the decision of the instructor and will be based on the documentation provided. Failure to provide appropriate documentation will result in the absence being considered unexcused.

In the event that a student will be absent for an extended period of time (more than one class meeting) due to illness or similar issues must notify the instructor immediately. An extended absence in compressed schedule courses can severely impact a student’s performance in the course. Students who will have an extended absence should seek guidance from the instructor as to whether they should continue in the course or drop.

**Classroom Policies and Essential Information**

Academic Honesty

Cheating and plagiarism are serious offences and will not be tolerated. Because cheating, plagiarism, and collusion in dishonest activities erode the integrity of the college, each student is expected to exert an entirely honest effort in all academic endeavors. Academic dishonesty in any form is a very serious offense and will incur serious consequences.

**Cheating** is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers, in an attempt to gain an unearned academic advantage. Cheating may include, but is not limited to, copying from another’s work, supplying one’s work to another, giving or receiving copies of examinations without an instructor’s permission, using or displaying notes or devices inappropriate to the conditions of the examination, allowing someone other than the officially enrolled student to represent the student, or failing to disclose research results completely.

**Plagiarism** is a specific form of cheating: the use of another’s words or ideas without identifying them as such or giving credit to the source. Plagiarism may include, but is not limited to, failing to provide complete citations and references for all work that draws on the ideas, words, or work of others, failing to identify the contributors to work done in collaboration, submitting duplicate work to be evaluated in different courses without the knowledge and consent of the instructors involved, or failing to observe computer security systems and software copyrights.

Any student found to have violated academic honesty standards on an assignment, quiz, or exam will **receive immediate sanctions.** Sanction can include a failing grade on the assignment or in the course at the discretion of the instructor. Student violating academic honesty standard may also be turned over to the Vice President of Student Services for further sanctions.

Classroom Conduct

The objective of this course is for students to learn, and accomplishing this requires a structured environment. Students must remain respectful of their fellow students and the instructor at all times. Disruptive behavior of any sort will not be tolerated. Students engaging in disruptive behavior such as loud outbursts, obscene gestures or language, harassment or belittlement of fellow students or the instructor, or any other offensive and disruptive conduct will be told to stop the behavior immediately. If a student persists with the behavior they will be ejected from the class and reported to the Vice President of Student Services.

Students are not to use tobacco products (smoking or smokeless) during class or in the vans while traveling to and from labs. Students using tobacco products during class or in the vans will be told to put the product away and case using it. If students continue to violate this policy they may be ejected from class. Students are not to bring any food items into class during lecture. When working with laptops or in computer labs students are not to consume food or drink to prevent damage to the computers. During field trips students are expected to clean up after themselves in the van and remove all drink and food containers/wrappers from the van.

Students should take care to arrive to class on time. It is distracting and disruptive to other students to arrive late and interrupt the class. Students arriving more than 15 minutes late should wait until a class break before entering the room. If a student is habitually late for class they will be required to meet with the instructor concerning their tardiness. For field trips students must be on time. The bus will not wait for students who are late. Failure to arrive on time may result in the student missing the field lab, and the student will be considered absent. If a student misses a quiz or other assignment due to a tardy they will not be allowed to make up the assignment without a valid excuse.

Electronic Devices

All electronic devices such as cell phones, I Pods, etc. must be turned off during class. Students may use laptops during class to take notes, but the sound must be muted to prevent disturbing class. Students must not use social media, e-mail, or surf the internet. Violation of these policies will result in the student no longer being allowed to use a laptop during class. The use of any electronic devices other than a non-graphing calculator during quizzes or exams is not permitted. Students violating these policies will receive a reminder to turn off devices or silence their laptops.

Academic Accommodation

If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

**Textbooks:**

Recommended - J. Allan *Stream Ecology,* ed. 2nd Springer, 2007,

Other References:

U.S. Army Corps of Engineers Wetland Delineation Manual.

<http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf>

National Wetlands Plant List 1996

<http://www.usace.army.mil/CECW/Documents/cecwo/reg/plants/national.pdf>

**Required Materials**

Students will need the following materials to perform tasks in class.

A scientific calculator such as a TI 30 series or similar

An engineer’s tri rule

**Grading Policy:**

Grades in this course will are based on a 10 point grading scale.

90-100% A

80-89% B

70-79% C

60-69% D

Final grades will be based on lab assignments, quizzes, and exams. The weight of each grading component is as follows. Final grades will only be rounded to the higher percentage if they are .5% or higher from the higher grade.

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| --- | --- |
| Item | Percent of Final Grade |
| Exam 1 | 15% |
| Exam 2 | 15% |
| Final Exam | 25% |
| Lab Assignments | 30% |
| Pop Quizzes | 15% |
| Total | 100% |

Mid-term Exams:

Exams will cover material from both the lecture and lab. Exams are cumulative and will cover materials from previous exams as well as material presented after the previous exam. No makeup examinations will be given. Students will have the option to replace their lowest exam grade with the grade of their final exam, provided they score higher on the final exam. In the event that a student misses an exam, this will count as the lowest score and the final exam score will take the place of the missed exam. Student with a valid excuse who notifies the instructor of this excuse one week prior to the exam will have the option of taking the exam early. This courtesy does not extend to unexcused absences.

Final Exam

Attendance for the final exam is mandatory. If a student will be absent for the exam they may reschedule the exam time with prior notice (a minimum of 4 business days). Students failing to take the final exam will receive an automatic 0. The final exam is cumulative and will cover any and all topics presented in lectures and labs.

Lab Assignments

Lab assignments will vary from practical skills assessments, computer assignments, and written lab reports. All assignments are due the following class period. Makeup lab assignments will not be allowed without a valid excuse. Students must attend the lab or provide an excuse to complete a lab assignment.

Quizzes

Students will be given unannounced quizzes at random during lectures. Quizzes will cover material and terms presented in the lecture and are designed to test student comprehension.

Late and Make Up Assignments

Late assignments will not be accepted. If a student misses the assignment deadline they will receive a 0. Student with valid excuses can turn in makeup assignments. All makeup assignments are due one week after the student returns to class. Assignments will not be accepted after the one week deadline.

Class Schedule

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| Week | Lecture | Lab |
| 1 | Introduction | Kings River Examination: School Farm |
| 2 | Watersheds as Units | Photo Identification of Watersheds |
| 3 | Watershed Types and Morphology | Stream Order, Drainage Patterns, and Stream Lengths |
| 4 | The Hydrologic Cycle | Soil Characteristics |
| 5 | Stream Ecology, Morphology, Stream Types, and Orders | Stream characteristics, Kings River. |
| 6 | Wetland Types and Management | Channel Characteristics and Morphology. |
| 7 | Exam 1 | Wetland Delineation Practice, School Farm. |
| 8 | Dam and Reservoir Impacts | Field Trip Pine Flat Dam and Upper Kings |
| 9 | Dissolved Oxygen, Turbidity, and Sedimentation | Water Quality Assessment: School Farm |
| 10 | Nutrient Balance and Impacts | Erosion Management: Sequoia National Forest |
| 11 | Aquatic Ecosystems an Fisheries | Nutrient Assessment: Kings River |
| 12 | Fisheries Management and Recreational Water Uses | Aquatic Insects and Ecosystem Observation: Kings River |
| 13 | Spring Break | |
| 14 | Exam 2 | Field Trip Friant Hatchery |
| 15 | Economic Impacts of Watershed Resources | Culvert Sizing and Stream Crossings |
| 16 | Laws Effecting Water Resources | Riparian Corridors: Reedley Farm |
| 17 | Guest Speaker: Matthew Meadows | Final Review |
| Final Exam |  |  |