REN Capstone Learning Goals and Philosophies Overview

The 3-quarter restoration ecology capstone sequence teaches you how to conceptually and practically develop, manage and implement an ecological restoration project as part of a team. The projects are accomplished in a realistic context, with students working on a team with peers from different academic and experiential backgrounds, and having the student team work closely to meet the needs of a real community partner. In these classes you will learn to approach ecological restoration utilizing five major ideas - **process-oriented ecological restoration**, **ecological principals**, **appreciative design**, **community-based restoration**, and **purposeful project management**.

**Process-oriented ecological restoration** focuses on identifying the lost or diminished ecological functions of a particular site and the disturbances that caused those losses. Habitat, soil stability, and water and nutrient retention are among the most common lost or diminished functions. Once identified, *purposeful* and *skillful* techniques can be employed to assist in recovery of those functions.

**Ecological principals** such as succession, patch dynamics, non-equilibrium communities, and island biogeography provide the theoretical basis for site selection, restoration design, and approach to stewardship. This is perhaps the most exciting and often contentious aspect of restoration; when science is purposefully and explicitly applied to solve specific problems. Every restoration project at some level is an experiment testing ecological principals.

**Appreciative design** utilizes an *iterative, interactive and structured social process* in developing the goals and objectives of a project. Input from community partners and stakeholders regarding desired project outcomes forms the basis for developing preliminary goals and objectives. These preliminary goals and objectives go through a series of revisions based on community partner and stakeholder feedback, site assessment results, and project team input, until clients and stakeholders are satisfied they meet expectations. This interactive process allows for mutual learning that often leads to changes in perspectives and innovation.

**Community-based restoration** engages the people that live near an ecological restoration site in the development, implementation and stewardship of that site. This engagement is facilitated by project managers and the local community leadership in open acknowledgement of the socioeconomic, cultural, and political context of each project. Long term relationships through collaboration are emphasized as key to building a culture of stewardship.

**Purposeful project management** means that each ecological restoration project is *intentionally* implemented in an *ordered* manner and is *finite* in space and time. There is a site with defined boundaries, there are defined objectives to meet realistic and achievable goals, work is scheduled and sequenced to enact those objectives and once the objectives are met the project has been completed. This does not mean however that the *restoration* of the site is complete. It means that a project in service to moving on-going restoration forward has been accomplished.

Capstone Expectations

As a capstone course sequence, the experience is specifically designed to utilize knowledge and skills that a student has accumulated from previous coursework and personal experience. Students are expected to be highly capable and self-motivated in accomplishing tasks, working independently, and applying prior knowledge to new challenges. Although some information on restoration approaches is presented in fall quarter, many new situations will arise in restoration projects that will require students to be assertive about pursuing knowledge and ultimately,
solutions, in an independent fashion (including asking instructors for advice and assistance). The instructors will meet regularly in classroom and in the field with students to provide guidance and oversight, but these courses demand considerable initiative on the part of the students.

Team Management & Personal Conduct

The team-based structure of the capstone course sequence is designed to reflect the realities of actual ecological restoration projects. This is an opportunity to hone your skills in communicating and accomplishing a complex endeavor over an extended time period in a team of individuals with different technical backgrounds. However, as you should well know, working in a team can present challenges — challenges not always present in many university classes. Working in a team is a critical component of this capstone experience and it will run over the entire 8-month course sequence. Before signing up for the capstone you should carefully consider if this team experience will be a good fit for your educational needs.

The instructors and each student maintain high expectations for the timely completion and quality of tasks and assignments. At the same time, patience and flexibility must be employed to temper these expectations within each team. These projects must be fit in with each team member’s busy academic, personal, and professional schedule. Not all team members can – or should — participate in every meeting, field activity, etc. Tasks should be divided up in an equitable fashion that utilizes the strengths, interests, and availability of each individual. Management of project teams and interpersonal interactions are critical to a successful capstone project. We walk talk more about this in class during fall quarter.

Another critical part of the capstone learning experience is working for a community partner. In some ways this can be analogous to working as an environmental consultant for a client, but often our community partners bring such a great depth of knowledge and experience that the relationship is closer to a “partnership” than an expert consultant — client relationship.

All students in the capstone should be treated as “young professionals.” In return each student is expected to behave as professionals in their conduct involving their instructors, their classmates, their project partners and members of the public such as volunteers, government officials, and members of the restoration ecology community.

Your Capstone Project

You will be introduced to the restoration projects for the 2016-17 academic year during a poster session early in the quarter. Directions to sites will be available on Canvas if you wish to look at them in person to help you in selecting your project preferences. You are required to complete a site selection assignment (detailed on the Canvas course site), detailing your project preferences and rationale. The instructors will use that information to assign students to specific projects and teams. We will do our best to accommodate your desires, while we also strive to create project teams of varied and appropriate backgrounds for the needs of each specific project. You cannot be guaranteed your first project choice, but in past years, most students get one of their top two selections.

Capstone Courses, Credit Hours & Work Load

The 10-credit capstone course sequence was originally established in the current configuration of a 2-credit fall course, a 3-credit winter course, and a 5-credit spring course. In that configuration, the expectations were that much of the field restoration work would take place
during spring quarter. However, experience has shown us that many projects (but not all) benefit from planting earlier – often in February and March - leading to a greater chance of success. The optimal timing of field work for a project will vary from project to project, depending upon goals and the site itself. Furthermore, the exact timing of field activities can be difficult to predict, often depending upon a variety of factors (weather, permitting, plant availability & delivery, etc.). Thus, you should be aware that the current distribution of credit hours among these 3 courses may not accurately reflect the relative intensity of workload distribution among the courses. It is not unusual for students to find that winter quarter is the most time-consuming, fall intermediate, and spring the least demanding. If this might affect your scheduling of other classes during the academic year, you should consult with your instructors to clarify the expected pace and scheduling for your specific project.