Digital Imaging Techniques (**BIO 498/698**)
Spring 2012
1 credit
Time: 3–4 p.m.
Biological Sciences, Rooms 146 and 154

<u>**Instructors**</u>:

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<u>**Prerequisites**</u>: None, familiarity with digital photography and/or digital photo editing desirable

<u>**Required Text**</u>: *Visionary Digital Manual* (pdf provided to students)

<u>**Course Description**</u>: This course introduces students to digital imaging techniques, focusing on biological specimens ranging in size from 100 microns to larger than 1 meter. Using the Visionary Digital™ BK Plus Lab System, students will learn how to prepare specimens and manipulate lighting, lenses, and camera bodies to produce high-quality images. Adobe® Photoshop® will be used to edit and color correct images. Students will learn to use a color-controlled workflow for digital photography from camera to final printing.

<u>**Course Objectives:**</u> This course provides an overview of the cutting-edge tools used in digital imaging for scientific studies. Students will become familiar with current literature on the topics of digital imaging and learn hands-on techniques for imaging small to large objects prepared in forms ranging from slides to mounted specimens. Students will produce a digital image portfolio and a tutorial addendum to the *Visionary Digital Manual*.

<u>**Course Structure**</u>: This course convenes 1 hour per week. The first part of the semester will focus on techniques and hands-on training, and the latter portion of the course will focus on and production of a student portfolio (Microsoft PowerPoint version and website version).

Class Schedule

Week		Class Activity	Individual Student Activity
1	16-Jan	Introduction to System	Develop portfolio outline (48 suites)
2	23-Jan	Introduction to Software	Develop portfolio outline
3	30-Jan	Web Development	Develop portfolio outline
4	6-Feb	K12 Test Runs	Create portfolio
5	13-Feb	Canon Test Runs	Create portfolio
6	20-Feb	Slide Test Runs	Create portfolio
7	27-Feb	Invertebrates	Portfolio Reviews
8	6-Mar	Review Guides	Create portfolio
9	16-Mar	Spring Break	Create portfolio
10	23-Mar	Review Guides	Create portfolio
11	30-Mar	Review Guides	Fishes & Stomates
12	6-Apr	Review Guides	Spiders
13	13-Apr	Specify & Morphbank	Ants I
14	20-Apr	YouTube Videos	Beetles & Ants II
15	27-Apr	Final Guide Review	Wrap Up Presentations
16	4-May	Discussion	PPT & Website Reviews
17	11-May	No final	Finish

Week 1
Overview of course and student expectations
Provide *Visionary Digital User Guide*
Introduction to hardware and software

Week 2
Roy Larimer, Skype Introduction
Review *Visionary Digital User Guide*
Demonstrate software (including file management)

Weeks 3-16
Define scope of student projects and course requirements

Expectations of Students

1. Portfolio of 30 image suites
    A. Images placed on class website (i.e., student webpage)
    B. PowerPoint booklet
2. YouTube video
    A. Produce at least one video of not more than 15 minutes in length. The video can describe any method(s) that the student used during the course or provide a description of the student's project, including the use of imaging in conjunction with the project.
3. Upload an image to Specify and Morphbank databases
4. Demonstrate ability to use of imaging equipment and software