EFB 326: DIVERSITY OF PLANTS

Instructor:	Danny Fernando 461 Illick Hall	Tel: 470-6746 Email: fernando@esf.edu

Office hours: 10:30 am to 12:00 pm Mondays and Wednesdays or by appointment

Schedule: Lecture (Baker 146): 9:30am to 10:25am MW
Lab (Illick 313): 1:50-4:50pm M; 12:30-3:30pm TTh; 2:55-5:45pm W

Textbook: Evert RF and Eichhorn SE. 2013. Raven's Biology of Plants, 8th Edition. W.H. Freeman and Company, NY.

Internet material: www.whfreeman.com/raven8e

Course description: This course offers an evolutionary survey of the origin and diversification of land plants through geological time. The course will start with the green algae and on how plants may have transitioned from aquatic to the land environment. Land plants that will be discussed include bryophytes, lycophytes, pteridophytes, gymnosperms and angiosperms with emphasis on representative fossil and living taxa. Lectures will emphasize on life histories, anatomical and morphological adaptations, ecology and climate change, extinction, phylogenetics, economic importance, and conservation strategies of representative taxa. The laboratory will provide ample hands-on opportunities for analysis of plant anatomy and morphology, reproductive mechanisms, evolutionary adaptations, and identification of a variety of living and preserved specimens.

Course requirements:
Lecture (60%): 4 lecture exams (15% each) **Laboratory** (40%): 4 lab exams (9-13% each)

Graduate TAs:
MW Mike Serviss (mjservis@syr.edu); Office: 457 Illick; Phone: x6786
TTh Jenny Potrikus (jrpotrikus@gmail.com); Office: 457 Illick; Phone: x6786

Lecture Schedule and Outline for Spring 2015

Date	Topics	Readings
Jan 12	Introduction and Importance of Plant Diversity	-
Jan 14	Systematics: The Science of Biological Diversity NO LABORATORY THIS WEEK	234-245
Jan 19	No Class (Martin Luther King Day)	
Jan 21	Major Evolutionary Trends LAB 1: KEYS, TAXONOMY AND PHYLOGENETICS	246-255
Jan 26	Ancestors of Land Plants: Green Algae	345-358
Jan 28	Early Transition to Land Environment LAB 2: CHLOROPHYTA: THE MOST PLANT-LIKE PROTISTS	-

Feb 02	Bryophytes: Liverworts	366-377
Feb 04	**First Lecture Exam (Covers Systematics to Green Algae)**	
	FIRST LAB EXAM (COVERS LABS 1 & 2)	
Feb 09	Bryophytes: Mosses and Hornworts	378-390
Feb 11	Evolution and Organization of the Vascular Plant Body	391-398
	LAB 3: BRYOPHYTA: THE FIRST LAND PLANTS?	
Feb 16	Early Vascular Plants: Rhyniophyta to Lycopodiophyta	398-409
Feb 18	Pteridophytes: Ferns	409-429
	LAB 4: EARLY VASCULAR PLANTS AND LYCOPODIOPHYTA	
Feb 23	Pteridophytes: Horsetails	409-429
Feb 25	Progymnosperms and Evolution of the Seed	430-433
	LAB 5: PTERIDOPHYTA: FERNS AND ALLIES	
Mar 02	**Second Lecture Exam (Covers Bryophytes to Pteridohytes)**	
Mar 04	Extinct Gymnosperms and Gymnosperm Phylogenetics	433-435
	SECOND LAB EXAM (COVERS LABS 3, 4 & 5)	
Mar 09 & 11	Spring Break	
Mar 16	Innovations of the Gymnosperms	435-448
Mar 18	Cycads, Ginkgo, and Gnetophytes	448-456
	LAB 6: GYMNOSPERMS: EARLY INNOVATIONS OF SEED PLANTS	
Mar 23	Some Interesting Conifers	-
Mar 25	**Third Lecture Exam (Covers Gymnosperms)**	
	LAB 7: SURVEY OF THE LIVING GYMNOSPERMS	
Mar 30	Innovations of the Angiosperms	457-476
Apr 01	Basal Angiosperms and Evolution of the Flower	477-485
	THIRD LAB EXAM (COVERS 6 & 7)	
Apr 06	Monocots and Eudicots	485-487
Apr 08	Co-Evolution of Flowers and Pollinators	487-490
	LAB 8: ANGIOSPERMS: THE MOST SUCCESSFUL GROUP OF PLANTS	
Apr 13	Phylogenetic Relationships of the Angiosperms	477-485
Apr 15	Phylogenetic Relationships of the Angiosperms	477-485
	LAB 9: POLLINATION AND SEED DISPERSAL MECHANISMS	
Apr 20	Adaptive Radiation of the Angiosperms	492-498
Apr 22	Biodiversity Hotspots of the World	-
	FOURTH LAB EXAM (COVERS 8 & 9)	
Apr 27	Biodiversity Hotspots of the World	-

FOURTH LECTURE EXAM WILL BE GIVEN DURING FINALS WEEK