

Biology 347/547 Aquatic Vascular Plants

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Grading:

The course grade will be based on 440 points distributed as follows:

Lecture exam on Oct. 30.....	100 points
Lab exam on Oct. 30.....	100 points
Lab exam at 12:30 p.m. on Dec. 18.....	100 points
Lecture exam at 1:45 p.m. on Dec. 18.....	100 points
A collection of 20 specimens (30 for 547 credit), due by noon on Dec. 19.....	40 points

Letter grades will be assigned according to point totals on the following scale:

407-440	= A
394-406	= A-
385-393	= B+
363-384	= B
350-362	= B-
341-349	= C+
319-340	= C
306-318	= C-
297-305	= D+
262-296	= D
below 262	= F

**SCHEDULE FOR BIOLOGY 347/547
FALL SEMESTER 2012**

- Sept. 4 Introduction; books, materials, and grading; plant collection walk to Schmeeckle Reserve.
- 6 Plant classification and scientific names; origins; phreatophytes and hydrophytes
- 8 9 a.m. to 3 p.m. Field trip to Bass Lake fen, Porters Lake and Pine River.*
- 11 Field trip to Jacqueline Lake bog and Tree Lake*.
- 13 Floating-leaf hydrophytes.
- 18 Field trip to Collins Lake and Sunset Lake.*
- 20 Submersed hydrophytes.
- 25 Field Trip to west side of Stevens Point.
- 27 Non-vascular macrophytes.
- Oct. 2 Field Trip to Bear Lake and Lime Lake*.
- 4 Non-flowering vascular aquatics; paleoherbs.
- 9 Lab on non-flowering macrophytes [Note; Labs will start at 3:30 for the rest of the semester].
- 11 Monocots up to pondweeds.
- 16 Lab on paleoherbs, and monocots up to pondweeds.
- 18 Pondweeds.
- 23 Lab on Pondweeds.
- 25 Review for test.
- 30 **Mid-semester lecture and lab exams**
- Nov. 1 Last part of monocots
- 6 Lab on monocots after pondweeds.

- 8 Buttercups through willows.
- 13 Lab on buttercups through willows.
- 15 Meadowsweet through lake cress.
- 20 Lab and lecture on meadowsweet through dogwoods.
- 27 Lab and lecture on ericads through bladderworts.
- 29 Mints through Joe-pye-weed.
- Dec. 4. Lab on Mints through Joe-pye-weed.
- 6 Finish any remaining lecture material.
- 11 Finish any remaining lab material; work on collection; review.
- 13 Practice lab exam.
- 18 Final lab and lecture exam, CNR 300, 12:30-2:30.**
- 19 Collections due by noon.

* = hip boots or waders needed on these field trips.

AQUATIC PLANTS TO LEARN (Arranged according to APWG phylogeny)

CHAROPHYTA

Chara - stonewort, muskgrass

BRYOPHYTA

Sphagnum - peat moss

Riccia - slender riccia

Ricciocarpus - purple-fringed riccia

LYCOPODIOPHYTA

Isoetes - quillwort

Lycopodiella inundata - bog club-moss

EQUISETOPHYTA

Equisetum fluviatile - pipes

POLYPODIOPHYTA

Osmunda regalis - royal fern

Onoclea sensibilis - sensitive fern

Thelypteris palustris - marsh fern

Azolla - mosquito fern

PINOPHYTA

Larix laricina - tamarack

Picea mariana - black spruce

Taxodium - bald cypress

Thuja occidentalis - white cedar

MAGNOLIOPHYTA

Brasenia - water shield

Nymphaea - water-lily

Nuphar - pond-lily, bull-lily, spatterdock

Ceratophyllum - coontail

Alisma - water plantain

Sagittaria - arrowhead

Acorus - sweet flag

Calla - water arum, marsh calla-lily

Spirodela - large duckweed

Lemna - common duckweed

L. trisulca - ivy-leaf duckweed

Wolffia - water meal

Elodea - waterweed, elodea

Vallisneria - wild celery, tape-grass

Potamogeton - pondweed

P. amplifolius - large-leaved pondweed, muskyweed

P. crispus - curly pondweed

P. epihydrus - ribbon-leaved pondweed

P. gramineus - variable pondweed

P. illinoensis - Illinois pondweed

P. natans - floating pondweed

P. nodosus - long-leaved pondweed

P. praelongus - zig-zag pondweed, white-stemmed pondweed

P. pusillus - small pondweed

P. richardsonii - Richardson's pondweed

P. robbinsii - fern pondweed

P. zosteriformis - flat-stemmed pondweed

Stuckenia pectinata - sago pondweed
Najas - bush-pondweed, naiad, water-nymph
Zannichellia - horned-pondweed
Ruppia - spiral ditchgrass
Iris - blue flag, iris
Cypripedium - lady's-slipper
Calopogon - grass-pink
Pogonia - rose pogonia
Arethusa - dragon's-mouth
Pontederia - pickerel-weed
Zosterella (Heteranthera) - water-star-grass
Eriocaulon - pipewort
Sparganium - burreed
Typha angustifolia - narrowleaved cattail
T. latifolia - broadleaved cattail
Juncus - rush
J. pelocarpus - brown-fruited rush
Carex - sedge
C. lacustris - lake sedge
C. stricta - tussock sedge
Cyperus - flat-sedge, nut-sedge, galingale
Dulichium - three-way sedge
Eleocharis - spike-rush
E. acicularis - needle spike-rush
Eriophorum - cotton-sedge
Schoenoplectus acutus - hard-stemmed bulrush
S. validus - soft-stemmed bulrush
S. subterminalis - threadleaved bulrush
Scirpus - woolgrass
S. atrovirens - dark-green woolgrass
S. cyperinus - common woolgrass
Leersia - rice cutgrass
Zizania - wild rice
Glyceria - mannagrass
Calamagrostis - bluejoint grass
Phalaris arundinacea - reed canary-grass
Phragmites - reed
Spartina - cordgrass
Caltha - marsh marigold
Ranunculus - buttercup, crowfoot
R. aquatilis - white water-crowfoot
R. flabellaris - yellow water-crowfoot
Myriophyllum - water-milfoil
M. tenellum - dwarf water-milfoil, leafless water-milfoil
M. sibiricum - common water-milfoil, northern water-milfoil
M. spicatum - Eurasian water-milfoil

Drosera - sundew
Persicaria (Polygonum) - smartweed
P. amphibia - amphibious smartweed
Rumex - dock
Hypericum - St.-John's-wort
Elatine - waterwort
Salix - willow
Comarum - marsh cinquefoil
Rhamnus frangula - glossy buckthorn
Alnus - alder
Decodon - water-willow
Lythrum salicaria - purple loosestrife
Nasturtium - water cress
Toxicodendron vernix - poison-sumac
Lysimachia - yellow loosestrife, swamp candles
Impatiens - jewelweed, touch-me-not
Andromeda - bog rosemary
Chamaedaphne - leatherleaf
Kalmia - bog laurel
Ledum - Labrador tea
Vaccinium - cranberry, blueberry
Sarracenia - pitcher-plant
Asclepias incarnata - swamp milkweed
Callitriche - water starwort
Hippuris - mare's-tail
Veronica - speedwell
Utricularia - bladderwort
Mentha - mint
Lycopus - water horehound
Hydrocotyle - water pennyroyal
Cicuta - water-hemlock, cowbane
Heracleum - cow parsnip
Angelica - angelica
Sium - water parsnip
Menyanthes - buckbean, bog-bean
Lobelia - lobelia, cardinal-flower
Solidago - goldenrod
Bidens (Megalodonta) - water marigold, water beggar-ticks

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