



Lakehead  
UNIVERSITY

Department of  
Biology

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Biology 4630 WA 2017  
Special Topic: Non-vascular plants  
(Winter) (3-3)

Course description:

This evening course reviews and builds on the introduction to Cyanobacteria, algae, mosses and lichens offered in the first year botany course. Classification and basic features of these plants will be covered, with emphasis on recent discoveries made regarding their importance in ecosystems and to humans. Labs will be mainly in the form of projects and centered on the herbarium. Oral and written reports and examinations will be the basis for evaluation of the depth of learning.

Curriculum:

**Introduction** to non-vascular plants - evolution of oxygenic environment and aquatic/land plant transition

**Collection**, preservation and documentation of non-vascular plants

**Ethnobotany** of non-vascular plants

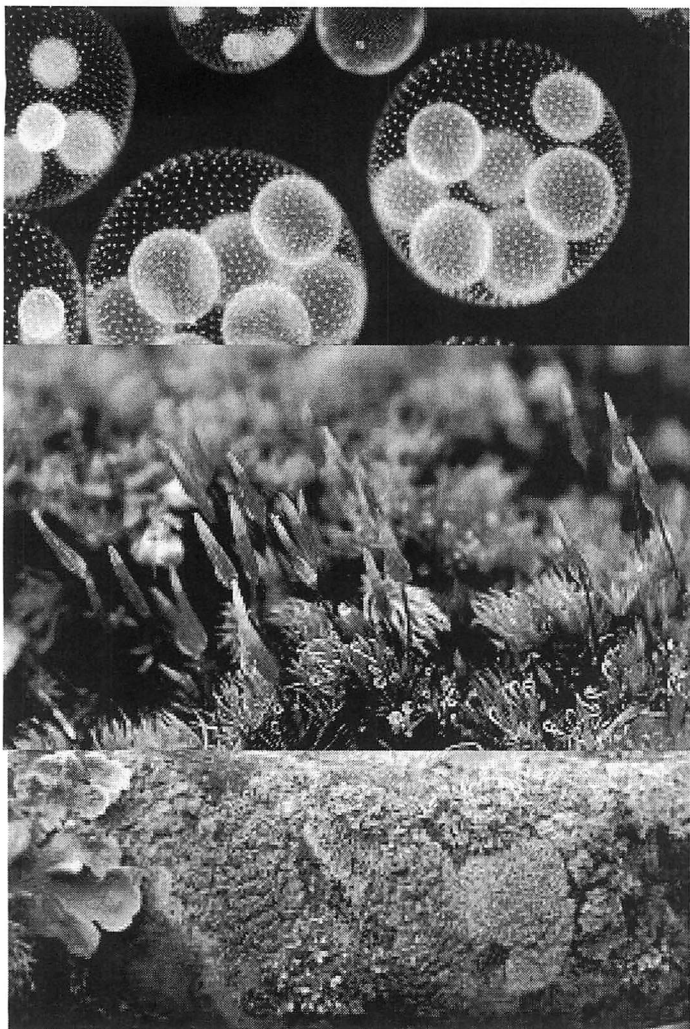
**Algae** - main group life cycles and taxonomy - (blue green), green, red, brown, Diatoms  
nitrogen fixation  
fresh water sponges  
response to phosphorus-eutrophication in fresh water and iron in marine systems  
as food / medicine  
source of oil - fossil/modern

**Mosses, liverworts, hornworts** - life cycles, taxonomy  
freezing tolerance  
human uses - sphagnum, other?

**Lichens** - types, taxonomy  
pollution sensitivity  
chemistry - dyes, food, medicines  
biogeography - latitudinal vs. altitudinal distribution  
new discovery of yeasts as partners - how was this missed/discovered?

Evaluation:

Life cycle and morphology presentations	20%
Mid-term exam (written)	25%
Term paper (project)	25%
Final examination (oral)	30%



## BIOLOGY OF NON-VASCULAR PLANTS

**BIOLOGY 4630 (WA, 2017, IN CB3010A)  
THIS COURSE ON ALGAE, MOSSES AND LICHENS  
WILL QUICKLY REVIEW BASICS LEARNED IN  
INTRODUCTORY BOTANY AND FOCUS ON IMPORTANT  
EVOLUTIONARY AND ECONOMIC ASPECTS OF THESE  
ORGANISMS. LABS WILL BE IN THE FORM OF PROJECTS  
CENTERED ON THE HERBARIUM**

**FOR MORE INFORMATION CONTACT [LMALEK@LAKEHEADU.CA](mailto:LMALEK@LAKEHEADU.CA)**