Biology of the Fungi
(NRMT/Biology 3450)

Instructor: Dr. Leonard J. Hutchison, Faculty of Natural Resources Management, Room 1007A, Braun Building

Teaching Assistant: Hanna Dorval

Lecture Slots: Mondays & Wednesdays 4:00 p.m. - 5:30 p.m. (Room 1050 Braun Building)

Laboratory Slots: Tuesdays (8:30 a.m. - 11:30 a.m. and 2:30 p.m. – 5:30 p.m.) (Room 1050 Braun Building)

Mark Distribution:

Midterm Examination 1	15% (Tuesday, February 5th, 2019)
Midterm Examination 2	15% (Tuesday, March 12th, 2019)
Culture Collection	40% (due Friday, April 5th, 2019)
Final Examination	30% (see examination schedule)

Last Date for Voluntary Withdrawal: Friday, March 8th, 2019

Textbook: This course has no textbook. Handouts will be provided to the students as the course progresses. The CD **Mycoalbum** will be available to students to sign out overnight.

Laboratory Manual: Moulds, Their Isolation, Cultivation and Identification by D.W.Malloch (available from the instructor).

Course Content: The structure, classification and biology of fungi and their importance to human society (*e.g.* industry, agriculture, health) and to the natural ecosystem. Emphasis will be placed on the various factors influencing the ecological success of fungi (*e.g.* discharge and dispersal of propagules, the substrate and it's influence on growth and development). This will be highlighted by examining in detail various lifestyles exhibited by fungi (as saprotrophs, as symbionts, as parasites and predators) and their interactions with other organisms (especially plants, insects, and other fungi). **HOWEVER BE WARNED, THIS IS A FAIRLY HEAVY COURSE. DON'T TAKE THIS COURSE IF YOU ARE LOOKING FOR AN EASY ELECTIVE!**

NRMT 3450/Biology 3450
Biology of the Fungi
(Brief course outline)

- Introduction to Fungi
- Hyphae, Hyphal Modifications and the importance of anastomoses
- Medical Mycology
  - Superficial or cutaneous infections
  - Subcutaneous infections
  - Systemic infections
  - Veterinary Mycology
- Structure and Biology of the Ascomycota
  - Hemiascomycetes (Endomycetales, Taphrinales)
  - Plectomycetes (Eurotiales, Onygenales, Ophiostomatales)
  - Pyrenomycetes (Erysiphales, Sordariales, Xylariales, Hypocreales, Clavicipitales)
  - Loculoascomycetes (Dothideales)
  - Discomycetes (Pezizales, Helotiales, Tuberales)
- Structure and Biology of the Lichens
  - Reproduction, anatomy, morphology, lichenometry, lichens and air pollution, economic uses of lichens
- Structure and Biology of the 'Deuteromycota'
  - Saccardo system versus the Hughes system of classification
  - mycotoxins caused by moulds
- Structure and Biology of the Basidiomycota
  - Hymenomycetes (Agaricales, Aphyllophorales)
  - Mating systems, decomposition of wood and litter, ectomycorrhizas, fungus gardens, mushroom toxins
  - Gasteromycetes (Lycoperdales, Sclerodermatales, Hymenogastrales, Phallales, Nidulariales)
  - Jelly Fungi (Dacrymycetales, Tremellales, Auriculariales)
  - Teliomycetes (Uredinales, Ustilaginales)
  - Basidiomycetous yeasts
- Structure and Biology of the Zygomycota
  - Mucorales
  - Entomophthorales
  - Glomales
- Structure and Biology of the Chytridiomycota

Structure and Biology of the Oomycota
- Saprolegniales
- Peronosporales

Structure and Biology of the Myxomycota
- Stemonitales
- Physarales
- Trichiales
- Liceales