Biology of the Fungi
(NRMT/Biology 3450)

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

Teaching Assistant: Larissa Hutton

Lecture Slots: Wednesdays & Fridays 1:00 p.m. - 2:30 p.m. (Room 1050 Braun Building)

Laboratory Slots: Tuesdays & Thursdays 8:30 a.m. - 11:30 a.m. (Room 1050 Braun Building)

Mark Distribution:

Midterm Examination 1	15% (Friday, February 7th, 2017)
Midterm Examination 2	15% (Friday, March 14th, 2017)
Culture Collection	40% (due Monday, April 10th, 2017)
Final Examination	30% (see examination schedule)

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).

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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