

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

<b>Course Code and Number:</b> BIO 370		<b>Number of Credits:</b> 4 <a href="#">Course credit policy (105)</a>															
<b>Course Full Title:</b> Introduction to Mycology <b>Course Short Title:</b> <i>(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)</i>																	
<b>Faculty:</b> Faculty of Science		<b>Department (or program if no department):</b> Biology															
<b>Calendar Description:</b> An introduction to the study of fungi. Lecture topics include origin and evolution, Indigenous uses, taxonomy, structure, genomics, metabolism, nutritional acquisition, ecology, pathology, and mycoses. The lab includes both laboratory and field components that give students hands-on exposure to the topics covered in lecture. Note: Field trips outside of class time may be required.																	
<b>Prerequisites (or NONE):</b>		BIO 210 and two other 200-level or above Biology courses.															
<b>Corequisites (if applicable, or NONE):</b>																	
<b>Pre/corequisites (if applicable, or NONE):</b>																	
<b>Antirequisite Courses</b> <i>(Cannot be taken for additional credit.)</i> Former course code/number: Cross-listed with: Dual-listed with: Equivalent course(s): <b>BIO 421G</b> <i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i>		<b>Special Topics</b> <i>(Double-click on boxes to select.)</i> This course is offered with different topics: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <i>(If yes, topic will be recorded when offered.)</i>															
		<b>Independent Study</b> If offered as an Independent Study course, this course may be repeated for further credit: <i>(If yes, topic will be recorded.)</i> <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit															
<b>Typical Structure of Instructional Hours</b> <table border="1"> <tr> <td>Lecture/seminar hours</td> <td>45</td> </tr> <tr> <td>Tutorials/workshops</td> <td></td> </tr> <tr> <td>Supervised laboratory hours</td> <td>45</td> </tr> <tr> <td>Experiential (field experience, practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Supervised online activities</td> <td></td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td><b>Total hours</b></td> <td><b>90</b></td> </tr> </table>		Lecture/seminar hours	45	Tutorials/workshops		Supervised laboratory hours	45	Experiential (field experience, practicum, internship, etc.)		Supervised online activities		Other contact hours:		<b>Total hours</b>	<b>90</b>	<b>Transfer Credit</b> Transfer credit already exists: <i>(See <a href="#">bctransferguide.ca</a>.)</i> <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Submit outline for (re)articulation: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <i>(If yes, fill in transfer credit form.)</i>	
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		<b>Grading System</b> <input checked="" type="checkbox"/> Letter Grades <input type="checkbox"/> Credit/No Credit															
		<b>Maximum enrolment (for information only):</b> 24 <b>Expected Frequency of Course Offerings:</b> Every other year <i>(Every semester, Fall only, annually, etc.)</i>															
<b>Department / Program Head or Director:</b> Gregory Schmaltz		<b>Date approved:</b> September 2021															
<b>Faculty Council approval</b>		<b>Date approved:</b> October 8, 2021															
<b>Undergraduate Education Committee (UEC) approval</b>		<b>Date of meeting:</b> January 28, 2022															

**Learning Outcomes:**

Upon successful completion of this course, students will be able to:

1. Demonstrate information competency on topics such as taxonomy, morphology, physiology, ecology, nutrition, and mycorrhizal associations.
2. Identify the major groups of fungi in the field.
3. Analyze critically relevant literature information on various topics in current research.
4. Communicate effectively orally and through writing on current topics in mycological research.
5. Demonstrate the importance of fungal biodiversity and analyze how many more fungi need to be identified.

**Prior Learning Assessment and Recognition (PLAR)**

☒ Yes      ☐ No, PLAR cannot be awarded for this course because

**Typical Instructional Methods** (*Guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion.*)

The course will consist of a series of lectures, laboratory exercises, field trips, student oral and written presentations, and small group class discussions. Students will also have to maintain a field notebook throughout the course to help improve their observational skills through short written paragraphs and drawings.

**NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.**

**Typical Text(s) and Resource Materials** (*If more space is required, download Supplemental Texts and Resource Materials form.*)

Author (surname, initials)	Title (article, book, journal, etc.)	Current ed.	Publisher	Year
1. Jim Deacon	Fungal Biology	<input checked="" type="checkbox"/>	Blackwell	2006
2. OK Miller, HH Miller	North American Mushrooms	<input checked="" type="checkbox"/>	Morris Book Pub	2006
3.		<input type="checkbox"/>		

**Required Additional Supplies and Materials** (*Software, hardware, tools, specialized clothing, etc.*)

Field notebook (waterproof field book).

**Typical Evaluation Methods and Weighting**

Final exam:	30%	Assignments:	%	Field experience:	%	Portfolio:	%
Midterm exam:	15%	Oral presentation:	10%	Practicum:	%	Term paper:	15%
Quizzes/tests:	10%	Lab exam:	15%	Field notebook:	5%	Total:	100%

**Details (if necessary):**

Typical Course Content and Topics

**Lecture topics:**

- Introduction to fungi; evolution of fungi
- Taxonomy of chytrids and zygomycota
- Taxonomy of glomeromycota
- Taxonomy of ascomycota
- Taxonomy of basidiomycota
- Aboriginal ethnomycology
- Cell structure and ultrastructure
- Nutritional requirements and acquisition of nutrients
- Metabolic processes
- Genomics
- Ecology of fungi: mycorrhizae, saprogenic fungi, pathogenic fungi
- Plant pathogens and entomopathogens
- Human mycoses

**Lab topics:**

- Introduction to lab techniques for fungi
- Culturing chytrids, pilobolus, and mushrooms
- Field Trip 1: Introduction to field collection methods
- Analyzing contact slide growth
- Set up mould kits; set up filamentous fungal beakers
- Prepare microscope slides using fresh material
- Observe various fungal prepared slides
- Field Trip 2: Trip to local mushroom growing operation
- Dilutions of the filamentous petri dish and plating
- Taxonomic techniques including PCR and gels
- Analyzing slides of the filamentous fungi

- Field Trip 3: Collection of fresh mushroom material from local forests
- Observe slides of fungal plant diseases
- Make cross-sections of lichens collected using lichen stains
- Field Trip 4: Trip to Ministry of Agriculture plant pathology lab
- Student presentations