George Mason University
Graduate Course Approval/Inventory Form

Please complete this form and attach a copy of the syllabus for new courses. Forward it as an email attachment to the Secretary of the Graduate Council. A printed copy of the form with signatures should be brought to the Graduate Council Meeting. Complete the Coordinator Form on page 2, if changes in this course will affect other units.

Please indicate:  ____X____ NEW  ____ MODIFY  ____ DELETE

Local Unit:  Environmental Science & Policy  Graduate Council Approval Date:

Course Abbreviation: EVPP

Full Course Title: Fungi and Ecosystems

Abbreviated Course Title (24 characters max.): FUNGI AND ECOSYSTEMS

Credit hours: 3

Program of Record: Environmental Science and Policy

Repeatable for Credit?  ____ D=Yes, not within same term  Up to hours
     ____ T=Yes, within the same term  Up to  hours
     ____ N=Cannot be repeated for credit

Activity Code (please indicate):  ____X____ Lecture (LEC)  ____ Lab (LAB)  ____ Recitation (RCT)
     ____ Studio (STU)  ____ Internship (INT)  ____ Independent Study (IND)  ____ Seminar (SEM)

Catalog Credit Format  3 : 3 : 0  Course Level:  GF(500-600)  ____X____ GA(700+)

Maximum Enrollment: 20

For NEW courses, first term to be offered:
Prerequisites or corequisites: BIOL 304 and/or a course in microbiology or permission of instructor.

Catalog Description (35 words or less)  Please use catalog format and attach a copy of the syllabus for new courses:
Considers the impact of fungi on ecosystems in terms of their effects on biogeochemical cycling, on primary and secondary production, and in terms of regulating community structure and populations of individual species through their activities as symbionts and parasites. Discusses the role of fungi in ameliorating pollutants produced by anthropogenic activities.

For MODIFIED or DELETED courses as appropriate:
Last term offered:  Previous Course Abbreviation:  Previous number:
Description of modification:

**APPROVAL SIGNATURES:**
Submitted by: ________________________________ email: 
________________

Department/Program: ________________________________ Date: 
________________

College Committee: ________________________________ Date: 
________________

Graduate Council Representative: ________________________________ Date: 
________________
# GEORGE MASON UNIVERSITY
## Course Coordination Form

**Approval from other units:** NONE

Please list those units outside of your own who may be affected by this new, modified, or deleted course. Each of these units must approve this change prior to its being submitted to the Graduate Council for approval.

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<thead>
<tr>
<th>Unit:</th>
<th>Head of Unit’s Signature:</th>
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Graduate Council approval: ___________________________ Date: __________

Graduate Council representative: ______________________ Date: __________

Provost Office representative: ________________________ Date: __________
SYLLABUS:

Instructor: Dr. Torzilli  
Email: atorzilli@gmu.edu

<table>
<thead>
<tr>
<th>Week</th>
<th>Subject</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction; Fungal Diversity</td>
<td>Chap 1</td>
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<td>2</td>
<td>Fungal Diversity, Fungal Structure</td>
<td>Chap 1,2</td>
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<td>3</td>
<td>Spores and Spore Dispersal</td>
<td>Chap 9</td>
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<td>4</td>
<td>Spore Dispersal, EXAM 1</td>
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<td>5</td>
<td>Fungal Growth</td>
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<td>Environmental Conditions for Growth</td>
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<td>Fungi and Primary Productivity: Making Nutrients Available</td>
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<td>Fungi and Primary Productivity: Plant Growth &amp; Carbon Fixation</td>
<td>Chap 12</td>
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<td>8</td>
<td>Fungi and Primary Productivity: Plant Growth &amp; Carbon Fixation</td>
<td>Chap 12</td>
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<td>9</td>
<td>EXAM 2, Fungi and Secondary Productivity: Fungal-Faunal Interactions</td>
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<td>Fungi and Secondary Productivity: Fungal-Faunal Interactions</td>
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<td>12</td>
<td>Fungal Interactions with Humans</td>
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<td>14</td>
<td>Student Presentations, Thanksgiving</td>
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<td>15</td>
<td>Student Presentations</td>
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Methods of Instruction:
The material in this course is primarily delivered by traditional lectures given by the instructor. The last two weeks of the class are devoted to student presentations on topics chosen in consultation with the instructor. These presentations require students to delve into the scientific literature on their topic and prepare an oral presentation for the class as well as an abstract and bibliography. Lecture exams will consist of short essay questions that will test a student’s understanding and application of principles covered in lecture.

Grading:
Graduate Students  
Lecture Exams 100 pts. x 2 = 200 pts  
Final Exam 200 pts  
30 min. Presentation 100 pts  
TOTAL 500 pts

This class will co-meet with EVPP 451. For graduate students, lecture exams will be graded on a different scale, relative to undergraduates, based on their more advanced academic standing.

Course Goals:
Because fungi are not highly visible organisms in ecosystems, they are often overlooked as
important contributors to ecosystem function. Most microbiology courses, in fact, pay short
shrift to these eukaryotic microbes which nonetheless represent an entire kingdom. Therefore,
the goals of this course are:
1) to provide students with a basic knowledge of fungal biology, particularly those aspects that
relate to their impact at the ecosystem level.
2) to examine the impact of fungi on ecosystem processes such as biogeochemical cycling,
primary production, secondary production, community and population structure, and interactions
with human activities.
3) to introduce students to molecular techniques currently being employed by fungal ecologists.
4) to identify the important gaps in our understanding of fungal ecology that should provide
direction for future research.