PLANT PATHOLOGY 521  GENERAL MYCOLOGY  3 Credits

Johnson Hall 343  T TH 10:35-11:50

INSTRUCTORS:  Dr. Gary Grove (GG), grove@wsu.edu
                Dr. Tim Paulitz (TP), paulitz@wsu.edu
                Dr. Jennifer Han (JH), jennifer.o.han@wsu.edu
                Dr. David Linnard Wheeler (DW), david.wheeler@wsu.edu

COURSE OBJECTIVE:  To provide a basic understanding of the biology, taxonomy, phylogeny and history of fungi.


COURSE WEBSITE:  Canvas, accessed from MyWSU

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Course Topics/Dates</th>
<th>Evaluation of Outcome: This outcome will be evaluated primarily by:</th>
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<tbody>
<tr>
<td>At the end of this course, students should be able to:</td>
<td>The following topic(s)/dates(s) will address this outcome:</td>
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<tr>
<td>Demonstrate scientific literacy in major concepts and processes relative to the major groups of fungi and fungal-like organisms</td>
<td>Weeks 1-15</td>
<td>Midterm and final exams; case studies; team presentations</td>
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<td>Locate and evaluate sources of scientific information on fungi and fungal-like organisms</td>
<td>Weeks 3, 4, 8, 12, 13, 15</td>
<td>Case studies and team presentations</td>
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<tr>
<td>Communicate and work effectively in groups in developing presentations</td>
<td>Weeks 4, 12, 15</td>
<td>Team presentations</td>
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REFERENCES (In Owen Science Library unless otherwise noted):


Requisite readings in parentheses refer to pages in Moore et al. (2019) unless otherwise noted; other than for the first class period, students are expected to have completed the readings and viewed posted presentations (on Canvas class site) prior to class.

8/24  Introduction; History of mycology; Fossil fungi; Classification of fungi; Species concepts (Chap. 1-3)
8/26  JH  Fungal Biology Part 1 (Chap. 4, 5)
8/31  JH  Fungal Biology Part 2 (Chap. 6)
9/02  DW  Basal Fungi; Chytridiomycota, Neocallimastigomycota, Blastocladiomycota
9/07  DW  Case Study #1: Frog Chytrid
9/09  DW  Mucoromycota
9/14  JH  Homokaryon to functional diploid; sexual reproduction (Chap. 7 & 8)
9/16  TP  Intro to Ascomycota; Saccharomycotina & Taphrinomycotina
9/21  TP  Asexual fungi (Chap. 9)
9/23  TP  Eurotiales—Penicillium and Aspergillus
9/28  GG  Powdery Mildews--Erysiphales
9/30  DW  Sordariales
10/05  DW  Dothideales
10/07  TP  Fungi as plant pathogens (Chap. 14)
10/12  DW  Cup Fungi
10/14  DW  Lichens (Chap. 13 Section 18)

MIDTERM EXAM (take-home)
10/19  JH  Fungi as symbionts & predators of animals (Chap. 15)
10/21  JH  Exploiting fungi for food (Chap. 11)
10/26  Team Presentations: Ecosystem Mycology
10/28  Team Presentations: Ecosystem Mycology
11/02  TP  Intro to Basidiomycota; Smuts
11/04  TP  Rusts
11/09  DW  Mushrooms
11/11  Veteran's Day: no class
11/16 GG  Case Study #2: Deadly Mushrooms
11/18 DW  Gasteromycetes & Jelly Fungi
11/22-26  Thanksgiving Break
11/30 JH  Fungi as pathogens of animals (Chap. 16)
12/02 DW  Fungal-like organisms; Hyphochytriomycota, Plasmodiophoromycota, Labyrinthulomycota
12/07 GG  Oomycota
12/09 DW  Slime molds
12/14  TAKE HOME FINAL EXAM  Due by 12:10 pm

ECOSYSTEM MYCOLOGY: TEAM PRESENTATIONS

This is your opportunity to learn about the different types of fungi occurring in various ecological niches and share that information with an audience. You will be working in groups of 3 on team presentations focused on ecological roles of fungi as saprotrophs and mutualists with plants—see Moore et al Chap. 13 for examples. Each team will develop a 20-25 minute presentation on their chosen topic. The presentations should be at a level appropriate for the students in the course, should include images, videos or animations, and must be both informative and engaging.

Abstract: A one-page (maximum length, not including references) abstract summarizing the presentation is required. The abstract will include a title, introduction, and key points about the topic. A minimum of five references (see information below) is required with the abstract.
References: A minimum of five references will be used—at least three references should come from the primary literature and/or reference books, and at least one reference should come from the popular press. Cite references in the text by author-date or by numbers. Arrange references alphabetically, and follow a recent issue of Mycologia, Phytopathology or Plant Disease for citation style. Use standard abbreviations for journal names, and if in doubt, spell it out.

Web page URLs must be current and citations are to include:
- Author’s name (if known)
- Date of publication or last revision (in parenthesis)
- Title of document
- Title of complete work (if applicable)
- URL
- Date of access (in parenthesis)

Presentation:

Each team presentation should be 20-25 minutes in length, and all members of the team are to participate. Creativity and originality in presentation style are strongly encouraged. Images of fungi must be included—the source of the images must be identified. Think about your audience in putting together your presentation—don’t be boring!

Evaluation: Grades for the project will be based on effort and creativity (40%); content (40%); quality of the abstract and oral presentations (20%), in particular how well you have conveyed information to the audience.

CASE STUDIES

Two case studies will be assigned during the semester. The case studies, which will be posted on the Canvas site, will present a problem involving one or more fungi that will require information retrieval and critical thinking to resolve. Students may collaborate online to come up with a response, but each student must provide justification for his/her answer and indicate if this was the result of collaboration or independent effort. Each case study response is worth 50 points.
GRADING PROCEDURE:

One midterm exam (100 points) and one final exam (100 points) will be given during the semester according to the schedule listed above. The exams will be take-home and will cover material presented in lectures, discussions, and reading assignments; the format will be short answer and short essay. Other graded components of the course will include team presentations (75 points) and abstract (25 points), and two case studies (50 points each).

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<tr>
<th>Graded Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>Midterm Exam</td>
<td>100</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100</td>
</tr>
<tr>
<td>Team Presentations</td>
<td>75</td>
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<tr>
<td>Team Abstracts</td>
<td>25</td>
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<tr>
<td>Case Studies (2)</td>
<td>100</td>
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<tr>
<td><strong>Total Points</strong></td>
<td><strong>400</strong></td>
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Grade Assignment: The final course grade will be rounded up or down based on the following scale. For example, 89.1-89.4% will be rounded down to 89%, 89.5-89.9% will be rounded up to 90%.

95 – 100%        A
90 – 94           A-
87 – 89           B+
84 – 86           B
80 – 83           B-
77 – 79           C+
74 – 76           C
70 – 73           C-
60 – 69           D
< 59              F

Expectation of Student Effort: For each hour of lecture equivalent, students should expect to have a minimum of two hours of work outside class.
Academic Integrity Statement

Academic integrity is the cornerstone of higher education. As such, all members of the university community share responsibility for maintaining and promoting the principles of integrity in all activities, including academic integrity and honest scholarship. Academic integrity will be strongly enforced in this course. Students who violate WSU’s Academic Integrity Policy (identified in Washington Administrative Code (WAC) 504-26-010(3) and -404) will receive [insert academic sanction (e.g., fail the course, fail the assignment, etc.)], will not have the option to withdraw from the course pending an appeal, and will be reported to the Office of Student Conduct.

Cheating includes, but is not limited to, plagiarism and unauthorized collaboration as defined in the Standards of Conduct for Students, WAC 504-26-010(3). You need to read and understand all of the definitions of cheating: http://app.leg.wa.gov/WAC/default.aspx?cite=504-26-010. If you have any questions about what is and is not allowed in this course, you should ask course instructors before proceeding.

If you wish to appeal a faculty member's decision relating to academic integrity, please use the form available at conduct.wsu.edu.”

Policy on Attendance, Participation and Late Assignments

Attendance and active participation in discussions are strongly encouraged. Exams will only be given on the designated dates without prior consent of the instructor and/or an excused absence. Assignments must be turned in by 5 pm on the due date; credit will not be given for late assignments except by prior consent of the instructor and/or an excused absence.

WSU Disability Statement

Reasonable accommodations are available for students with documented disabilities or chronic medical or psychological conditions. If you have such a condition and need accommodations to fully participate in this class, please visit your campus’ Access Center/Services website to follow published procedures to request accommodations. Students may also contact their campus offices to schedule an appointment with a Disability Specialist. All disability related accommodations are to be approved through the Access Center/Services on your campus. It is a university expectation that students connect with instructors (via email, Zoom, or in person) to discuss logistics within two weeks after they have officially requested their accommodations.

For more information, contact a Disability Specialist on your home campus:

- Pullman, WSU Global Campus, Everett, Bremerton, and Puyallup: 509-335-3417 Access Center (https://www.accescenter.wsu.edu) or email at access.center@wsu.edu
- Spokane: 509-358-7816 Access Services (https://spokane.wsu.edu/studentaffairs/access-resources/) or email j.schneider@wsu.edu
- Tri-Cities: Access Services (http://www.tricity.wsu.edu/disability/) or email g.hormel@wsu.edu
- Vancouver: 360-546-9238 Access Center (https://studentaffairs.vancouver.wsu.edu/student-wellness-center/access-center) or email van.access.center@wsu.edu
WSU Safety
Classroom and campus safety are of paramount importance at Washington State University, and are the shared responsibility of the entire campus population. WSU urges students to follow the “Alert, Assess, Act,” protocol for all types of emergencies and the “Run, Hide, Fight” response for an active shooter incident. Remain ALERT (through direct observation or emergency notification), ASSESS your specific situation, and ACT in the most appropriate way to assure your own safety (and the safety of others if you are able).

Please sign up for emergency alerts on your account at MyWSU. For more information on this subject, campus safety, and related topics, please view the FBI’s Run, Hide, Fight video and visit the WSU safety portal.

COVID-19 Policy: Per the proclamation of Governor Inslee on August 18, 2021, masks that cover both the nose and mouth must be worn by all people over the age of five while indoors in public spaces. This includes all WSU owned and operated facilities. The state-wide mask mandate goes into effect on Monday, August 23, 2021, and will be effective until further notice.

Public health directives may be adjusted throughout the year to respond to the evolving COVID-19 pandemic. Directives may include, but are not limited to, compliance with WSU’s COVID-19 vaccination policy, wearing a cloth face covering, physically distancing, and sanitizing common-use spaces. All current COVID-19 related university policies and public health directives are located at https://wsu.edu/covid-19/. Students who choose not to comply with these directives may be required to leave the classroom; in egregious or repetitive cases, student non-compliance may be referred to the Center for Community Standards for action under the Standards of Conduct for Students.

Policy Prohibiting Discrimination and Harassment (Executive Policy 15): This policy expresses WSU’s commitment to maintaining an environment free from discrimination, including sexual harassment. This policy applies to all students, faculty, staff, or others having an association with the University.

Discrimination, including discriminatory harassment, sexual harassment, and sexual misconduct (including stalking, intimate partner violence, and sexual violence) is prohibited at WSU (See WSU Policy Prohibiting Discrimination and Harassment (Executive Policy 15) and WSU Standards of Conduct for Students).

If you feel you have experienced or have witnessed discriminatory conduct, you can contact the WSU Office of Compliance and Civil Rights (CCR) and/or the WSU Title IX Coordinator at 509-335-8288 to discuss resources, including confidential resources, and reporting options. (Visit https://ccr.wsu.edu/ for more information).

Most WSU employees, including faculty, who have information regarding sexual harassment or sexual misconduct are required to report the information to CCR or a designated Title IX Coordinator or Liaison. Visit https://ccr.wsu.edu/file-a-complaint/ for more information.
Accommodation for Religious Observances or Activities: Washington State University reasonably accommodates absences allowing for students to take holidays for reasons of faith or conscience or organized activities conducted under the auspices of a religious denomination, church, or religious organization. Reasonable accommodation requires the student to coordinate with the instructor on scheduling examinations or other activities necessary for course completion. Students requesting accommodation must provide written notification within the first two weeks of the beginning of the course and include specific dates for absences. Approved accommodations for absences will not adversely impact student grades. Absence from classes or examinations for religious reasons does not relieve students from responsibility for any part of the course work required during the period of absence. Students who feel they have been treated unfairly in terms of this accommodation may refer to Academic Regulation 104 – Academic Complaint Procedures.