

FS 301

FOOD MYCOLOGY

FALL 2017

TITLE OF COURSE: FS 301 FOOD MYCOLOGY
CREDIT HOURS: 3 CR (2 CR LECTURE + 1 CR LAB)
CLASSROOM: EP (ENGINEERING/PHYSICS BUILDING) 214; T, TH 9:30 – 10:20 AM
FRC (FOOD RESEARCH CENTER) 206; W 9:00 AM - NOON

INSTRUCTOR: DR. DOJIN RYU PHONE: (208) 885-0166
OFFICE: AG SCI 116 E-MAIL: dryu@uidaho.edu
OFFICE HOURS: TUESDAYS & THURSDAYS, 8:30-10:30 AM OR BY APPOINTMENT

INSTRUCTOR: DR. SCOTT MINNICH PHONE: (208) 885-2477
OFFICE: AG BIOTECH 209 E-MAIL: sminnich@uidaho.edu
OFFICE HOURS:

TEACHING ASSISTANT: ANDREW ROBINSON, (208) 885-9703, robi5767@vandals.uidaho.edu

COURSE DESCRIPTION: Survey of the fungi important in food production, storage, and spoilage.

PREREQUISITES: General Microbiology & Lab BIOL250/255 (UI); MBIOS 101 or MBIOS305/304 (WSU).

UI STUDENT LEARNING OUTCOMES (SLOs):

- 1. Learn and integrate** – *Through independent learning and collaborative study, attain, use, and develop scientific knowledge and the ability to integrate information across disciplines.*
 - (a) identify major food constituents and their functions in foods,
 - (b) describe chemical and physical properties of foods,
 - (c) demonstrate principles of food processing and their effect on the properties of foods.
- 2. Think and create** – *Use multiple thinking strategies to examine real-world issues, explore creative avenues of expression, solve problems, and make consequential decisions.*
 - (a) apply knowledge to solve problems in food science,
 - (b) apply logical and critical thinking in addressing the issue at hand.
- 3. Communicate** – *Acquire, articulate, create and convey intended meaning using verbal and non-verbal methods of communication that demonstrate respect and understanding in a complex society.*
 - (a) identify and use appropriate terms and definitions in verbal and written communication,
 - (b) communicate effectively with the targeted audience.
- 4. Clarify purpose and perspective** – *Explore one's life purpose and meaning through transformational experiences that foster an understanding of self, relationships, and diverse global perspectives.*
 - (a) recognize the complexity of global food supply and production,
 - (b) examine relationship between food and culture.

5. **Practice citizenship** – *Apply principles of ethical leadership, collaborative engagement, socially responsible behavior, respect for diversity in an interdependent world, and a service-oriented commitment to advance and sustain local and global communities.*
- (a) explore local, national, and global issues in food science,
 - (b) improve lifestyle with acquired knowledge in food science.

REQUIRED TEXTBOOK

R.A. Samson, J. Houbraken, U. Thrane, J.C. Frisvad, and B. Andersen. Food and Indoor Fungi, CBS-KNAW Fungal Biodiversity Centre, 2010. (CBS Laboratory Manual Series; No. 2). ISBN 978-90-70351-82-3.

RECOMMENDED READING:

J. Dijksterhuis and R.A. Samson. Food Mycology: A Multifaceted Approach to Fungi and Food, CRC Press, 2007. ISBN 978-0-8493-9818-6.

B. Kendrick. The Fifth Kingdom, 3rd Ed, 2001, Focus Publishing. ISBN 978-1585100224.
Available in parts online: <http://www.mycolog.com/fifhtoc.html>.

<u>EVALUATION:</u>	Mid-term	100 points	20%
	Comprehensive Final Exam	150 points	30%
	Lab reports	100 points	20%
	Group Project	100 points	20%
	<i>Final paper (60 pts) + Presentation (30 pts) + Peer evaluation (10 pts)</i>		
	<u>Quizzes</u>	<u>50 points</u>	<u>10%</u>
	TOTAL	500 points	100%

Grades:	<u>Total Points</u>	<u>Percentile</u>	<u>Final Grade</u>
	450 – 500	90 – 100%	A
	400 – 449	80 – 89%	B
	350 – 399	70 – 79%	C
	300 – 349	60 – 69%	D
	<300	<60%	F

Exams: Exams will use a variety of question types including multiple choice, true/false, matching, fill-in-the-blank, short answer, and/or essay. **Please bring #2 pencils for all exams.** **Final exam** is scheduled for two hours, **7:30 – 9:30 am on December 13 (Friday)** <https://www.uidaho.edu/registrar/classes/finals/fall> and will cover all course materials including Group Projects, i.e. comprehensive.

Quizzes: Quizzes (3-5/semester) will be given during class periods **without** prior notice.

Group Project: Students are expected to complete one group project. Detailed instruction with deadlines will be provided separately. If an assignment is submitted late, the grade point will be deducted for each day past the due date. The contents of **all** group projects will be included in the final exam.

You are expected to attend every class. If you are absent, you may miss a quiz, and you are not likely to fully understand the material covered in class, which will result in lower grades. If the exam or quiz is missed due to illnesses or other causes, the make-up will only be given with appropriate documentation, e.g. physician's note. Students should make every effort to notify the instructor regarding absence at least 24 hours prior to the class or exam.

Students are encouraged to use Bb Learn as all lecture materials and announcements could be found in the site. All applicable assignments must be submitted via Bb Learn also, and students are responsible for learning proper technique for submission.

Important!! Please feel free to ASK questions in and out of the classroom regarding the course materials. Discussion with peers is highly encouraged.

Students with Disabilities

Reasonable accommodations are available for students who have documented temporary or permanent disabilities. All accommodations must be approved through Disability Support Services located in the Idaho Commons Building, Room 306 (Phone 885-6307; Email dss@uidaho.edu; website at www.uidaho.edu/dss) in order to notify your instructor(s) as soon as possible regarding accommodation(s) needed for the course.

Academic Regulations & Student Affairs Policy Regarding Absences

It is the policy of the Office of Student Affairs to assist students during crisis situations where they are unable to notify their instructors prior to a hurried emergency departure. The Office of Student Affairs will send professors an "Emergency Notification" in those instances where the student will be away for more than two days. The Office of Student Affairs will not issue notifications retroactively or for "one-day emergencies."

University of Idaho Classroom Learning Civility Clause: In any environment in which people gather to learn, it is essential that all members feel as free and safe as possible in their participation. To this end, it is expected that everyone in this course will be treated with mutual respect and civility, with an understanding that all of us (students, instructors, professors, guests, and teaching assistants) will be respectful and civil to one another in discussion, in action, in teaching, and in learning. Should you feel our classroom interactions do not reflect an environment of civility and respect, you are encouraged to meet with your instructor during office hours to discuss your concern. Additional resources for expression of concern or requesting support include the Dean of Students office and staff (5-6757), the UI Counseling & Testing Center's confidential services (5-6716), or the UI Office of Human Rights, Access, & Inclusion (5-4285).

Academic integrity will be strongly enforced in this course. Any student caught cheating on any assignment will be given an F grade for the course and will be reported to the Office Student Standards and Accountability. Cheating is defined in the Standards for Student Conduct WAC 504-26-010 (3). It is strongly suggested that you read and understand these definitions: <http://conduct.wsu.edu/policies/standards-of-conduct/>

Plagiarism and Academic Integrity Addendum:

University of Idaho, Student Code of Conduct, Article II—Academic Honesty

1. Cheating on classroom or outside assignments, examinations, or tests is a violation of this code.
2. Plagiarism, falsification of academic records, and the acquisition or use of test materials without faculty authorization are considered forms of academic dishonesty and, as such, are violations of this code.
3. Because academic honesty and integrity are core values at a university, the faculty finds that even one incident of academic dishonesty seriously and critically endangers the essential operation of the university and may merit expulsion. [rev. 7-98]
4. The operation of UI requires the accuracy and protection of its records and documents. To use, make, forge, print, reproduce, copy, alter, remove, or destroy any record, document, or identification used or maintained by UI violates this code when done with intent to defraud or misinform.
5. All data acquired through participation in UI research programs is the property of the university and must be provided to the principal investigator. In addition, collaboration with the University Research Office for the assignment of rights, title, and interest in patentable inventions resulting from the research is also required [see 5400 A through E].
6. Entrance without proper authority into any private office or space of a member of the faculty, staff, or student body is a violation of this code.
7. It is also a violation to hack or make unauthorized use of any computer or information system maintained by the university or a member of the faculty, staff, or student body. [rev.7-05]
8. Instructors and students are responsible for maintaining academic standards and integrity in their classes. Consequences for academic dishonesty may be imposed by the course instructor. Such consequences may include but cannot exceed a grade of “F” in the course. The instructor should attempt to notify the student of the suspected academic dishonesty and give the student an opportunity to respond. The notice and the opportunity may be informal and need not be in writing. Penalties for any disciplinary infraction must be judicially imposed. [See 1640.02 C-5] [rev. 7-98]
9. Instructors may report incidents of academic dishonesty to the dean of students. Upon receiving such a report, the dean of students shall provide the student with written notice that a report has been made and an opportunity to meet with the dean to discuss the report. The dean of students shall maintain the report and any record of the meeting for a period of time deemed appropriate by the dean. The dean of students may file a complaint against the student after the meeting has taken place or the student has elected, either affirmatively or through inaction, not to meet with the dean. [add. 7-98]

For more information on academic integrity and academic dishonesty, please visit:

http://www.webpages.uidaho.edu/cae_core/hart/academic_integrity.htm as well as
<https://www.uidaho.edu/student-affairs/dean-of-students/student-conduct/academic-integrity/students>

FS 301

FOOD MYCOLOGY

FALL 2017

TENTATIVE LECTURE SCHEDULE

Week	Lecture 1	Lecture 2	Laboratory
1	Course introduction; Major groups of fungi	Fungal morphology and classification; Microscopy	Lab safety; Basic microscopy
2	Fungal life cycles and reproduction	Media and basic culture techniques	Preparation of media and inoculation
3	Factors affecting the growth of fungi	Isolation and enumeration of foodborne fungi	Basic techniques for isolation and enumeration
4	Yeasts	Isolation and culture of yeasts	Isolation and culture of yeasts
5	Overview of foodborne fungi and their characteristics	Morphology of foodborne fungi and identification	Observation of fungal morphology
6	Genus <i>Aspergillus</i> : morphology, ecology, identification	Mycotoxins produced by <i>Aspergillus</i>	Isolation and identification of <i>Aspergilli</i>
7	Genus <i>Penicillium</i> : morphology, ecology, identification	Mycotoxins produced by <i>Penicillium</i>	Isolation and identification of <i>Penicillia</i>
8	Review/Discussion	Mid-term Exam	Mid-term Exam
9	Genus <i>Fusarium</i> : morphology, ecology, identification	Mycotoxins produced by <i>Fusarium</i>	Isolation and identification of <i>Fusaria</i>
10	Other foodborne fungal genera: morphology, ecology, identification	Mycotoxins produced by other foodborne fungal genera	Isolation and identification of other genera; Start identification of unknowns
11	Post-harvest spoilage of fruits and vegetables	Fungi in processing and spoilage of meat products	Observation of common food spoilage fungi
12	Fungi in food processing and fermentation	Commercial production of soy sauce and cheese	Production of soy sauce and cheese
13	Fungi as food; Mushrooms	Commercial production of mushrooms	Mushroom morphology
14	Mushroom poisons and hallucinogens	Review – Diversity of fungi and their use in food processing	Complete identification of unknowns
15	Review –Food spoilage	Review –Food safety	Review and discussion
16	Final Exam		

You are expected to take each test on the given dates unless prevented by circumstances beyond your control. **Make-up tests will only be allowed with written documentation.** Please let me know before the test if you cannot be present.