NOTE to prospective students: This syllabus is intended to provide students who are considering taking this course an idea of what they will be learning. A more detailed syllabus will be available on the course site for enrolled students and may be more current than this sample syllabus. Summer term courses may be accelerated – please check the Ecampus Schedule of Classes for more information.

CROP 420/520
Seed Science and Technology – 3 credits

COURSE CREDIT:
(3) This course combines approximately 90 hours of instruction, online activities, and assignments for 3 credits.

PREREQUISITES, CO-REQUISITES AND ENFORCED PREREQUISITES:
Biology, plant anatomy and/or physiology courses are recommended.

COURSE DESCRIPTION:
CROP 420. SEED SCIENCE AND TECHNOLOGY (3).
This course provides understanding of: Flowering processes in plants, seed structure, and types of seeds and fruits; Seed formation and development; chemical composition of seeds; seed ecology; various physiological and biochemical aspects of seed germination, dormancy, deterioration and storability. Seed quality, its importance, attributes and impact on field performance. Seed viability, vigor, and purity; and methods of measuring them. Taught via E-campus only.

CONTACT INFORMATION:
Instructor: Sabry G. Elias, Ph.D. sabry.elias@oregonstate.edu Phone: 541-737-4799  Fax 542-737-2126
TEACHING ASSISTANT: Kimberly Japhet  kimberly@oregonstate.edu Phone: 541-609-0939

Sample syllabi may not have the most up-to-date information. For accuracy, please check the ECampus Schedule of Classes to see the most current instructor information. You can search for contact information by name from the OSU Home Page.
LEARNING RESOURCES:
Textbooks, lab manuals, etc.; indicate if required or optional.


**NOTE:** For textbook accuracy, please always check the textbook list at the OSU Bookstore website. Sample syllabi may not have the most up-to-date information.

Students can also click the ‘OSU Beaver Store’ link associated with the course information in the Ecampus schedule of classes for course textbook information and ordering.

COURSE SPECIFIC MEASURABLE STUDENT LEARNING OUTCOMES:
Upon the completion of this course, students should be able to:

- Describe how seeds are formed and developed, the basic parts of seeds, and the various types of seeds and fruits.
- Explain factors that affect seed formation and development.
- Understand the main events that occur during germination and factors influencing it.
- Compare types of seed dormancies, their causes, and methods of breaking them.
- Understand the difference between seed viability and seed vigor and the relationship to field performance.
- Comprehend the physiological and biochemical aspects of seed deterioration and seed moisture content.
- Learn different seed testing methods of viability, vigor, varietal identification, and other seed attributes.
- Learn the principles of seed certification.

COURSE CONTENT AND POLICIES:
Course Policy

- **Reading assignments:** Students must read the assigned chapters in the textbook and the related lecture and laboratory materials in advance. The sequence of lectures and laboratories is outlined in the lecture and laboratory schedules.
- **Assigned questions after each chapter or laboratory:** Students must answer the questions at the end of each chapter or laboratory as assigned by the instructor and submit them in the due dates.
- **Quizzes:** Students are expected to take the quizzes on the scheduled dates. If a student is unable to take a quiz on the due date because of verifiable unforeseeable
reasons, e.g., illness, accident, etc., the instructor or the TA will determine a make-up date for another quiz.

- **Mid-term and final exam**: Students are expected to take the mid-term and final exams at the due date.

- **Term paper**: In consultation with the instructor/TA, students should select a topic for the term paper by the third week of the term. Term papers will be completed in three steps: first draft, second draft, and final paper. The ‘draft sequence’ style of writing will give the students opportunities to learn, revise, consult with the instructor, and produce a better quality paper than the ‘one stage’ final term paper.

- A list of suggested research topics is in the syllabus as a guide, but the student can select any topic that he/she may be interested in the area of seed science and technology.

- Some chapters in the textbook may not be covered during the term because of the time constraint. You will be responsible to read them in your own.

- If you have any question regarding the course materials, please ask by e-mail. Chances are that you are not the only person with that question. If you should ask a question that is not relevant to the current class, we can discuss it outside of the class arena or open it up to the group discussion on Canvas discussion board.

- If you have concerns about how you are doing in the class or information about something covered in lecture or lab, or help in preparing for an exam, please contact the instructor or the TA.

**Concise outline of topics and/or activities**

- The course involves 10 lectures and 8 laboratories.

- Each lecture and lab will focus on a specific topic and have a reading set mainly from the recommended textbook and the notes provided in the PowerPoint lectures and labs.

- The laboratory component of the course involves several hands-on “home” experiments that will need to be documented and included in laboratory reports as assignments.

The course will cover the following subjects:

- Various biological, morphological and physiological aspects and processes occurring in seeds during formation and development, germination and maturation, dormancy, and deterioration.

- Seed quality aspects, including evaluation of seed viability, vigor, genetic and physical purity, and the relationship between laboratory tests and field performance.

- Seed processing techniques, including drying, storability, seed moisture relations, seed cleaning, enhancement, certification systems, and seed marketing.
EVALUATION OF STUDENT PERFORMANCE:
Assessments will be done via Canvas, so no proctor is needed. Quizzes and exams will be timed and taken only once.

Grade element Point Value Description COURSE GRADING

The final grades will be based on the following:

<table>
<thead>
<tr>
<th>Grade element</th>
<th>CROP 420</th>
<th>CROP 520</th>
</tr>
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<tbody>
<tr>
<td>Weekly assigned questions on chapters</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Two quizzes reviewing content (5% each)</td>
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<td>10%</td>
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<tr>
<td>Laboratory reports</td>
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<td>10%</td>
</tr>
<tr>
<td>Mid-term exam</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>One term paper (those taking the courses as 420)</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Three research paper summaries (For Graduate 520 credit only).</td>
<td></td>
<td>20%</td>
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GRADING SCALE

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
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<tbody>
<tr>
<td>A</td>
<td>92-100%</td>
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<tr>
<td>A-</td>
<td>90-91%</td>
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<tr>
<td>B+</td>
<td>88-89%</td>
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<td>B</td>
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<td>60-61%</td>
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<tr>
<td>F</td>
<td>&lt;60%</td>
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COURSE SITE LOGIN INFORMATION
Information on how to login to your course site can be found HERE.

CHECK CANVAS FOR DETAILS.

STATEMENT REGARDING STUDENTS WITH DISABILITIES
Oregon State University is committed to student success; however, we do not require students to use accommodations nor will we provide them unless they are requested by the student. The student, as a legal adult, is responsible to request appropriate accommodations. The student must take the lead in applying to Disability Access Services (DAS) and submit requests for accommodations each term through DAS Online. OSU students apply to DAS and request accommodations at our Getting Started with DAS page.

Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for
contacting the faculty member in charge of the course prior to or during the first week of the
term to discuss accommodations. Students who believe they are eligible for
accommodations but who have not yet obtained approval through DAS should contact DAS
immediately at 541-737-4098.

Additionally, Canvas, the learning management system through which this course is offered,
provides a vendor statement certifying how the platform is accessible to students with
disabilities.

**ACADEMIC INTEGRITY AND STUDENT CONDUCT (OSU POLICY)**

Students are expected to be honest and ethical in their academic work. Intentional acts of
academic dishonesty such as cheating or plagiarism may be penalized by imposing an “F”
grade in the course.

Student conduct is governed by the universities policies, as explained in the Office of the
Dean of Student Life: Student Conduct and Community Standards. In an academic
community, students and faculty, and staff each have responsibility for maintaining an
appropriate learning environment, whether online or in the classroom. Students, faculty, and
staff have the responsibility to treat each other with understanding, dignity, and respect.

Students are expected to conduct themselves in the course (e.g. on discussion boards, email
postings, etc.) in compliance with the university's regulations regarding civility. Students will
be expected to treat all others with the same respect as they would want afforded to
themselves. Disrespectful behavior (such as harassing behavior, personal insults,
appropriate language) or disruptive behaviors are unacceptable and can result in sanctions
as defined by Student Conduct and Community Standards.

For more info on these topics please see:
- Statement of Expectations for Student Conduct
- Student Conduct and Community Standards - Offenses
- Policy On Disruptive Behavior

**PLAGIARISM**

You are expected to submit your own work in all your assignments, postings to the discussion
board, and other communications, and to clearly give credit to the work of others when you
use it. Academic dishonesty will result in a grade of “F.”

- Statement of Expectations for Student Conduct
- Avoiding Academic Dishonesty
TECHNICAL ASSISTANCE
If you experience computer difficulties, need help downloading a browser or plug-in, assistance logging into the course, or if you experience any errors or problems while in your online course, contact the OSU Help Desk for assistance. You can call (541) 737-3474, email osuhelpdesk@oregonstate.edu or visit the OSU Computer Helpdesk online.

- COURSE DEMO
- GETTING STARTED

TUTORING
For information about possible tutoring for this course, please visit our Ecampus NetTutor page. Other resources include:

- Writing Center
- Online Writing Lab

STUDENT EVALUATION OF TEACHING
The online Student Evaluation of Teaching form will be available in week 9 and close at the end of finals week. Students will be sent instructions via ONID by the Office of Academic Programs, Assessment, and Accreditation. Students will log in to “Student Online Services” to respond to the online questionnaire. The results on the form are anonymous and are not tabulated until after grades are posted. Course evaluation results are very important and are used to help improve courses and the learning experience of future students. Results from questions are tabulated anonymously and go directly to instructors and unit heads/supervisors. Unless a comment is “signed,” which will associate a name with a comment, student comments on the open-ended questions are anonymous and forwarded to each instructor. “Signed” comments are forwarded to the unit head/supervisor.

REFUND POLICY INFORMATION
Please see the Ecampus website for policy information on refunds and late fees.