



Oregon State University

Ecampus

**Course Name:** Design of Coffee

**Course Number:** ENGR 101

**Credits:** 2

**Course Description:**

Roast coffee beans and brew and taste coffee while using engineering design to create the perfect cup of coffee using the least amount of electricity.

**Required Materials:**

The Design of Coffee: An Engineering Approach (ISBN-10: 1537305573)

**Course Learning Objectives:**

The focus of this course is to provide students a hands-on learning environment to roast coffee beans and brew coffee while exploring the different factors that contribute to the taste of coffee. Students will learn about the engineering design process as well as the chemical and physical processes involved in making coffee and experiment to create the perfect cup of coffee.

At the end of the course, all students will be able to:

- Identify and apply the 'engineering design process' for roasting and brewing coffee (identifying the problem/goal; imagine/develop solutions; isolate best solution; creating a test/prototype; effectuate the test plan; redesign as needed).
- Understand basic thermal-fluid phenomena and methods as applied to roasting and brewing coffee (transport of heat and mass; heat and its relation to work and energy; and coffee chemical reactions).
- Recognize elementary logistics for sourcing, transporting, and distributing coffee.
- Identify basic qualities of roasted and brewed coffee such as smell, taste, texture - understanding how the physical processes/properties of roasting and brewing coffee affect its quality.

**General Aim for Distribution of Course Credit Hours:**

(This represents a student's anticipated labor level per aspect of the course.)

Graded Material:

<u>Component</u>	<u>Percent of Total</u>
Lecture	30%
Assigned reading	10%
Laboratory and Laboratory	60%
Quizzes/Exams	10%

A student's final grade in the course will be based upon "Course Citizenship" (5% of a student's final grade); "Safety Form" (5% of a student's final grade); "Lab Quizzes" (20% of a student's final grade); "Lab Reports" (50% of a student's final grade); "Exam" (20% of a student's final grade).

**Grading Scale:**

A	93-100%	C	73-77%
A-	90-93%	C-	70-73%
B+	87-90%	D+	67-70%
B	83-87%	D	63-67%
B-	80-83%	D-	60-63%
C+	77-80%	F	Below 60%

**Assignments:**

Most weeks will have at least one lab quiz. The lab quizzes are open-note and open-book. Unless told otherwise, all lab quizzes will be issued to students via Canvas. Technical difficulties as reasons for not completing and successfully submitting your lab quiz results/solutions will not be accepted. Late lab quizzes will not be accepted. All lab quizzes will be submitted to the instructor by students in accordance to the respective lab quizzes' instructions. In other words, if a lab quiz instructs students to submit their work as a PDF through canvas, then any PDF submitted to the instructor through email will not count and a zero grade will be given. In the case that a lab quiz requires a PDF submission, then only one PDF file per completed lab quiz shall be submitted to the instructor by the student. If there are multiple submissions for a lab quiz, only the most recent lab quiz submission will be graded up until, but no further, then the quizzes' due date. Not all problems/aspects from lab quizzes will necessarily be graded, but those problems, which are graded, will represent the lab quizzes' overall score.

Most weeks will have at least one lab report due. Unless told otherwise, all lab report requests will be issued to students via Canvas. Technical difficulties as reasons for not completing and/or not turning in lab reports will not be accepted. Late lab reports will not be accepted. All lab reports will be submitted to the instructor by students in accordance to the respective lab report's instructions. In other words, if a lab report instructs students to submit their work as a PDF through canvas, then any PDF submitted to the instructor through email will not count and a zero grade will be given. In the case that a lab report requires a PDF submission, then only one PDF file per completed lab report shall be submitted to the instructor by the student. If there are multiple submissions for a lab report, only the most recent lab report submission will be graded up until, but no further, then the lab report's due date. Not all problems/aspects from lab reports will necessarily be graded, but those problems, which are graded, will represent the lab report's overall score.

**Exams:**

There's an exam on week 10 but no final exam. The exam will be open-book and open-note. Exam problems submitted late are not accepted and a student will receive a zero for such an occurrence. The exam will not be handed back to students after submission, but students are encouraged to contact the instructor to seek clarification or greater understanding for the grade they received on the exam if they so desire. Technical difficulties as reasons for not completing or turning in the exam will not be accepted.

**Makeup Exams:**

Makeup exams will be given only for missed exams excused in advance by the instructor. To receive an excused absence for an exam, students shall inform the instructor before the end of the first week of the term. If a student brings the need for an excused absence to the attention of the instructor beyond the first week, the student will have no guarantee at obtaining permission for a makeup exam. Excused absences will not be given for airline reservations, routine illness (colds, flu, stomach aches), deaths in family, or other ailments. Excused absences will generally not be given after the absence has occurred, except under very unusual circumstances.

**Tutoring:**

NetTutor is a leading provider of online tutoring and learner support services fully staffed by experienced, trained and monitored tutors. Students connect to live tutors from any computer that has Internet access. NetTutor provides a virtual whiteboard that allows tutors and students to work on problems in a real time environment. They also have an online writing lab where tutors critique and return essays within 24 to 48 hours. One can access NetTutor from within Canvas by clicking on the Tools button under the course menu.

**Students with Disabilities:**

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at <http://ds.oregonstate.edu>. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

**Expectations for Student Conduct:**

Students are expected to behave in a courteous and respectful manner toward their peers and instructors at all times. Class disruptions will not be tolerated. Cell phone use is not permitted during lecture. For more information on student conduct and university policies, please see the following website:  
<http://studentlife.oregonstate.edu/studentconduct/offenses-0>.

Students are expected to be honest and ethical in their academic work. Academic dishonesty is defined as an intentional act of deception in one of the following areas:

- Cheating- use or attempted use of unauthorized materials, information or study aids
- Fabrication- falsification or invention of any information
- Assisting- helping another commit an act of academic dishonesty
- Tampering- altering or interfering with evaluation instruments and documents
- Plagiarism- representing the words or ideas of another person as one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University's Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.

### **Student Evaluation of Courses:**

The online Student Evaluation of Teaching (SET) system opens to students the Monday of dead week and closes the Monday following the end of finals. Students will receive notification, instructions and the link through their ONID. They may also log into the system via Online Services. Course evaluation results are extremely important and used to help improve courses and the learning experience of future students. Responses are anonymous (unless a student chooses to "sign" their comments agreeing to relinquish anonymity) and unavailable to instructors until after grades have been posted. The results of scaled questions and signed comments go to both the instructor and their unit head/supervisor. Anonymous (unsigned) comments go to the instructor only.