

**Grain Technology in Food Science, Spring 2022 SYLLABUS
Dual Level Course - FOS 6936 (1629) / FOS 4936 (1936)
3 units credit**

Lectures: Location Thursdays at (Rinker 210), Period 2-3 (8:30-10:25 AM) and Fridays at (APL 101), Period 2 (8:30 - 9:25 AM).

Instructor: Dr. Gloria Cagampang
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Office Hours: (7:30 AM to 3:30 PM Wednesdays to Fridays)

Course Description:

The course is designed for PhD, Master, and graduating candidates in the Department of Food Science and Human Nutrition and it involved 3-credit hours of lectures. The lectures deal on the basic science of the 5 leading cereal grains (rice, corn, wheat, sorghum, and barley) with emphasis on their physical, chemical, and biochemical properties and their relevance on the processing, application, and utilization of the cereal grains in foods. Attendance to all the lectures is mandatory and will be part of the final grade for the course. Consistent attendance in the lectures carries major influence in the learning process with satisfactory grades.

Prerequisites: Undergraduate courses in biochemistry.

Class attendance and make-up work: Requirements for class attendance and make-up exams, assignments, and other work in this course consistent with university policies. [Click here to read the university attendance policies.](#)

Students with disabilities: Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. [Click her to get started with the Disability Resource Center.](#) It is important for students to share their accommodation letter with the instructor and discuss needs, as early as possible in the semester. The schedules of the lectures will be strictly adhered to as per attached calendar registered in Canvas to ensure the completion of the learning as specified in the syllabus. Students will not be required to UF except during examinations as specified in the schedule.

Objectives:

1. To provide the general knowledge on the agronomy, production and trade of the above cereal grains in the domestic and global markets.
2. To provide the basics of the critical parameters involved in the utilization and subsequent handling involved in the preservation of their quality.
3. To provide the basic chemistry of cereal grains with focus in the understanding of the relevance of their physicochemical and biochemical properties in their functions as ingredients in foods.
4. To provide knowledge and understanding of the changes and reactions of the cereal grains in the food system influencing the quality and shelf-life of the finished food.
5. To provide the fundamentals of the metrics for assessing the quality of cereal grains that are relevant to the safety of their usage as ingredients in the food system.
6. To provide the updated knowledge on the nutritional and health benefits of the constituents of the grains focusing on the myths and realities as ingredients in foods.

Format: Lectures will involve discussions on relevant issues and further clarifications on the topics. Term papers on the cereal grains not discussed in the lectures will be encouraged for additional credits if time allows.

Exams: Three written exams involving the applications of the knowledge gained in the lectures and discussions. **The schedule of the exams will be provided and posted in the Schedule of Lectures.**

Grading:**Percent of Grade**

Written examinations (3) ----- 90

Participation and attendance ----- 10

Grade points will be assigned per [UF grading policies](#).

Final Grades

Final Grades will be assigned as follows:

90.0-100.0 % A

80.0-89.9 % B

70.0-79.9 % C

60.0-69.9 % D

All Lecture Materials: Posted in the Canvas. There is no required textbook for this course.

Additional reading references

- Chemistry and Technology of Cereal Grains 2015
- Principles of Cereal Science and Technology, Third Edition 2010
- Current articles in the Cereal Chemistry Publications 2016-2017
- World Wheat, Corn, and Rice. June 10, 2015.

Course Content: All posted in Canvas:

1. Part I – Structural Components of Cereal Grains.
2. Physical properties of cereal grains.
3. Evolution of Business Initiatives: supply chain and trade challenges in the domestic and global markets.
4. Processing of cereal grains.
 - a. Harvesting and treatment
 - b. Grading
 - c. Milling and milling parts separation
 - e. Storage and handling
5. Genetic modifications of cereal grains: Improvement of Nutritional Values
6. Chemistry and stability of cereal products
7. Heart Healthy Grains : Information on health benefits

Schedule of Examinations:

Examination #1- Date will be posted

Examination #2- Date will be posted

Examination #3 -Date will be posted

Lecture Schedules: List will be posted in Canvas

Protocol during classes:

1. Turn off cell phones
2. Raise hands for discussions, clarifications, & questions: The course is meant to be interactive. One conversation at a time.
3. Enough time will be provided for note taking.

GatorEvals

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.