

Salahaddin University
College of Agricultural Engineering sciences

Food Department

Cereal Technology
(Theory part)

2021-2022



Outline and objectives

This course is focused on different chemical and technological aspects of cereal crops. Wheat, barley, corn, rice, oat and rye are included.

The aim is to elucidate the relationships between the different compositional and quality parameters with technological processing issues to make the student familiar with this technology and enable him to make reasonable judgments and decision at right time during processing steps or quality control of cereal processing after his graduation.

This course is completing the requirements of food science and technology student's bachelor degrees

Forms of Teaching

The topics listed in the syllabi will be covered in the lectures.

A handout will be printed and distributed to the students; more information will be covered during lecturing while the references will be used to complete the lectures topics.

The students is asked to study all topics in the lectures at home.

To get the best of the course it is suggested that the students attend classes as much as possible.

Lectures note, are for supporting not for submitting the reading material from text books and periodicals related to this subject. Many problems will rose during the lecture for discussions

Course material

Required books:

1- Cereal science and technology 3rd ed.(2010)
Jan A Delcource and R. Carl Hoseney

2- Wheat chemistry and technology 4th ed.
(2009) Khalil Khan and Peter R. Shewry

Journals & internet site

1-Cereal chemistry published AACCC

2- many internet sites during searching for any related subject

Course program

Week 1 : Origin of cereal, chromosomal structure, annual production,

Week 2 : Cereal microscopic structure

Week 3 : Classification of cereals and cereal properties

Week 4 : Storage of cereal and the factors related to grain quality

Week 5 : Wheat flour dry milling and milling parameters.

Week 6 : Flour types and its properties

Weeks 7: Processing of durum wheat and pasta products

Week 8 : Barley and malt production

- Week 9 : Rice and its products, parboiled rice, quick cooking rice
- Week 10 : Baby foods as related to rice crop
- Week 11 : Corn , corn flour, meal, wet milling
- Week 12 : Starch production from corn
- Week 13 : pop corn and other corn products
- Week 14 : Breakfast cereal
- Week 15 : Examination + discussion.

Note: This syllabus may be subjected to change according to the time available

Pattern's of questions

Q / Define the following:

Q / Explain why:

Q/ Fill in the blanks with the suitable word or phrase:

Q/ Write the differences between:

Q/Answer by true & false then corrects the false statement or just **correct the following sentences**

Q/ Draw precisely the following.

Q/ Match the following words with those in the table below.

CEREAL STRUCTURE



Structure of Cereals

Every cereal scientist should understand the structure of the industrially important cereal grains, as they are of utmost importance for many aspects of **cereal technology**, e.g., for milling of common wheat or durum wheat, for processing of maize (corn) or rice, or for barley malting.

In this chapter, we deal with the structures of the most important cereals used for food and/or feed purposes

(i.e., wheat, maize, and rice), as well as with those of barley, rye, triticale, oats, sorghum, and pearl millet.

