

FST-313, Bakery Products Technology 3(2-1)

Educational Objectives:

The target of this course is to have a more in-depth understanding of the relation between: ingredients, recipe buildup, processing and bakery equipment and the huge variations in bakery products. Along with practical, importance is also laid on the theoretical element in order to get a sound background and to be confident and in control of the process. The course will focus on making students understand the basics of baking science, baking procedures and role of different ingredients in bakery products manufacturing. This course will help students to dive into the commercial and technological aspects of the baking technology.

This course is intended to introduce basic scientific and nutritional principles which will form the base for scientific modules going forward. The core food molecules such as carbohydrates, fats and proteins will be discussed from both a chemical and nutritional aspect. The theory will be underpinned via the use of rheological and chemical laboratory testing of relevant bakery ingredients and finished products.

Course Outcomes:

1. Understand the basics of baking science, baking procedures, and role of different ingredients in bakery products manufacturing
2. To know about technique of manufacturing different bakery products
3. To gain the practical knowledge of variety of bakery products manufacturing
4. To prepare trained manpower for baking industries.
5. Introduction to the main food hygiene theories and practices. In particular, current food hygiene legislation requires food businesses to develop and implement a food safety management system based around HACCP. Students will learn how to devise and implement such a system.
6. The production of artisan bread products, developing the hands-on production skills and analysing the technical aspects of producing a number of different fermentation and dough development styles within the sector.

Course Contents:

- Baking science and technology: introduction, status in Pakistan.
- Baking ingredients: flours wheat, gluten, rice, rye. Baking ingredients: sweeteners, eggs, yeast, chemical leaveners, shortenings, fat replacers, water. Functional additives: emulsifiers, enzymes, antioxidants, eggs, milk and milk products.
- Principles of baking: mixing, fermentation, baking.

- Bakery products: breads, cakes, biscuits, crackers, doughnuts, pizza, muffins, bagels, pretzel.
- Dietetics bakery products.
- Quality control in bakery.

Recommended Books:

1. Weibiao Zhou, 2014, Y. H. Hui, Bakery products science and technology. Wiley-Blackwell
2. Karuppasamy Packiyam, 2020, Textbook on Bakery science and technology: baker is maker, Schoalrs Press
3. Pyler, E.J. 2010. Baking science and technology. Vol-I & II. Sosland Pub. Co., Kansas, USA.