

AGI 6582 Food Processing

Level	5
Course Code	AGI 6582
Course Title	Food Processing
Credit value	5
Core/Optional	Optional
Course Aim/s	To provide knowledge on principles of food processing techniques and practices of food industry
Course Learning Outcomes (CLOs):	<p>After completion of this course student will be able to;</p> <p>CLO1: Explain what is food processing and its commercial importance [PLO1][PLO2].</p> <p>CLO2: Explain the underlying principle of all the food processing techniques [PLO2].</p> <p>CLO3: Identify the most suitable processing technique and processing equipment based on the raw material quality and the expected quality of the final product [PLO3][PLO4].</p> <p>CLO4: Develop a processing flow chart for a particular product of interest [PLO6][PLO11].</p> <p>CLO5: Evaluate the suitability of selecting food processing methods while assuring food safety [PLO8][PLO11][PLO12]</p>
Content (Main topics, sub topics)	<p>Outline Syllabus:</p> <p>Unit 1: Ambient Temperature Processing</p> <p style="padding-left: 20px;">Session 01: Raw Material Preparation: Cleaning, Sorting, Grading and Peeling</p> <p style="padding-left: 20px;">Session02: Size Reduction</p> <p style="padding-left: 20px;">Session 03: Mixing and Forming</p> <p style="padding-left: 20px;">Session 04:Emulsification and homogenization</p> <p style="padding-left: 20px;">Session 05: Mechanical separations - Filtration</p> <p style="padding-left: 20px;">Session 06: Fermentation</p> <p style="padding-left: 20px;">Session 07: Enzyme Technology</p> <p style="padding-left: 20px;">Session 08: Irradiation</p> <p>Unit 2: Heat Processing</p> <p style="padding-left: 20px;">Session 09: Blanching</p> <p style="padding-left: 20px;">Session10: Pasteurization</p> <p style="padding-left: 20px;">Session 11: Heat sterilization</p> <p style="padding-left: 20px;">Session 12: Retorting</p> <p style="padding-left: 20px;">Session 13: Principals of Dehydration</p> <p style="padding-left: 20px;">Session 14: Drying methods and equipment's</p> <p style="padding-left: 20px;">Session 15: Evaporation</p> <p style="padding-left: 20px;">Session 16: Baking and roasting</p> <p style="padding-left: 20px;">Session 17: Frying</p> <p style="padding-left: 20px;">Session 18: Microwave heating and infra radiation</p> <p>Unit 3: Freezing and Post Processing</p> <p style="padding-left: 20px;">Session 19: Chilling</p> <p style="padding-left: 20px;">Session 20: Freezing</p> <p style="padding-left: 20px;">Session 21: Effect of freezing on food</p> <p style="padding-left: 20px;">Session 22: Freeze drying and Freeze concentration</p> <p style="padding-left: 20px;">Session 23: Coating or Enrobing</p> <p style="padding-left: 20px;">Session 24: Filling and Sealing of Containers</p>

Unit 4 : Novel Technologies

Session 25: Applications of nanotechnology in food processing

Session 26: High Pressure processing

Session 27: Supercritical fluid extraction

Session 28: Encapsulation of food ingredients

Session 29: Effect of food processing technologies on controlling microbiological growth

Laboratory Work:

1. Ambient temperature processing techniques: (Fermentation, membrane filtration, mechanical separation, vacuum filtration, sonication)
2. Heat processing techniques (Blanching, drying, spray drying, microwave heating)
3. Freezing and post processing techniques (blast freezing, Chilling, Thawing)