# Syllabus

## *Course Description*

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| **Course Title** | Food processing equipment |
| **Course Code** | 44708 |
| **Course Title Additional** | |
| **Scientific-Disciplinary Sector** | AGR/09 |
| **Language** | English |
| **Degree Course** | Master in Food Sciences for Innovation and Authenticity |
| **Other Degree Courses (Loaned)** | |
| **Lecturers** | dr. Giovanni Carabin,<br>Giovanni.Carabin@unibz.it<br>https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/35346<br>Dr. Pasqualina Gloria Sacco,<br>PasqualinaGloria.Sacco@unibz.it<br>https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/48345 |
| **Teaching Assistant** | |
| **Semester** | First semester |
| **Course Year/s** | 2nd |
| **CP** | 6 |
| **Teaching Hours** | 36 |
| **Lab Hours** | 24 |
| **Individual Study Hours** | 90 |
| **Planned Office Hours** | 18 |
| **Contents Summary** | The course aim is to provide the attendants theoretical and practical fundamentals of the basic principles of a food production chain, focusing on the engineering and organisational aspects of the food processing equipment that must be there used. Particular emphasis will be devoted to the conceptual tools that must be used in the designing of a full production industrial line. The aim of the course is to offer a general overview of scientific contents |

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| | combined with specific professional skills and knowledge. In addition, the student will acquire soft skills connected to scientific presentations or reports. |
| **Course Topics** | The course will cover the following key areas:<br>- Introduction to Food Processing Equipments<br>- Conceptualization of Food Processing<br>- Fundamentals of Food Process Design<br>- Introduction to financial aspects<br>- Basic Physics for Food Process Design<br>- Analysis of specific Unit Operations in Food Processing<br>- Introduction to Life Cycle Assessment (LCA) methodology for evaluating the environmental impacts of food processing systems. |
| **Keywords** | Food Processing Equipments, Fundamentals of Design FPE, Financial aspects for FPE, FPE Unit Operations, Life Cycle Assessment in FPE |
| **Recommended Prerequisites** | |
| **Propaedeutic Courses** | None |
| **Teaching Format** | The course will be delivered through in-person lectures, supported by teaching materials provided directly by the instructors. Textbooks may be optionally recommended, intended solely for students who wish to explore topics in greater depth or consult an additional reference. |
| **Mandatory Attendance** | No |
| **Specific Educational Objectives and Learning Outcomes** | The course aim is to provide the attendants theoretical and practical fundamentals of the basic principles of a food production chain, focusing on the engineering and organisational aspects of the food processing equipment that must be there used. Particular emphasis will be devoted to the conceptual tools that must be used in the designing of a full production industrial line. The aim of the course is to offer a general overview of scientific contents combined with specific professional skills and knowledge. In addition, the student will acquire soft skills connected to scientific presentations or reports. |
| **Specific Educational Objectives and Learning Outcomes (additional info.)** | Knowledge and understanding of the conceptual design and planning of an industrial food production line, including insights in the food unit operations and related physical running principles. Applying knowledge and understanding in scientific and professional environments, focusing on specific case studies. |

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| | Applying analytical and modelling tools for conceptual and practical designing of production lines.<br>Making judgments when assessing different solutions for a given technological application on the basis of its technical, organizational, environmental and economic performances.<br>Achieving the basis for investment assessment.<br>Communication skills in presenting scientific results in written and oral form, in particular using an appropriate English language, as well as proper graphical tools for exhaustive analytical reports.<br>Learning skills concerning the ability to find information on the web and access their validity, to use and transmit the technical knowledge acquired in the course. |
| **Assessment** | Assessment will be conducted through an oral examination designed to evaluate the student's knowledge, presentation skills, and practical competencies acquired during the course.<br>The oral exam (maximum duration: 45 minutes) includes a scientific presentation - prepared individually at home - on a topic chosen by the student. The presentation should be supported by slides (e.g., PowerPoint). Following the presentation, additional questions will be asked on topics covered during the lectures. |
| **Evaluation Criteria** | The criteria that will be relevant for assessment will consider clarity of answers, mastery of language, ability to summarize, evaluate, and establish relationships between topics, capability of managing graphical designing tools. |
| **Required Readings** | Materials distributed by the teachers. |
| **Supplementary Readings** | Materials distributed and/or recommended by the teachers. |
| **Further Information** | |
| **Sustainable Development Goals (SDGs)** | Industry, innovation and infrastructure, Good health and well-being |