

Name	Innovation and Trends for the Future	Field of study	-
Classification	Extracurricular Course/Project	School	Polytechnic Institute of Bragança
Academic Year	2023/2024	Year of study	1
Type	Modular	Semester	-
Workload (hours)	81	Contact hours	T - - TP 18 PL - TC - S - E - OT - O -
		Level	- ECTS credits 3.0
		Code	9997-946-1001-00-23

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Elsa Cristina Dantas Ramalhosa

#### Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:  
To know the different baking techniques, both in theory and practice, of bread made with yeast sourdough (Biga, Poolish, Fermented Dough, Cucharón).

#### Prerequisites

Before the course unit the learner is expected to be able to:  
Have basic knowledge of baking.

#### Course contents

- Manual preparation of different products by students;
- Preparation of breads with different doughs;
- Learn how to use cold technology to achieve greater productivity and profitability.

Note: The course is taught by external experts - Carlos Mariel and Elisabete Ferreira (Clube Richemont Portugal). Elsa Ramalhosa - Professor at ESA/IPB - supports the Curricular Unit.

#### Course contents (extended version)

1. Flour specifications.
2. Understand the difference between pH and degree of acidity.
3. Use pH in daily production to obtain good results.
4. Create a sourdough starter, or 'mother', from the beginning.
5. Apply different preparation techniques in baking:
  - Yeast starter doughs (Biga, Poolish, Fermented Dough, Cucharón), from white flour;
  - Use of special flours (rye, corn, etc.).
6. Know when raw materials should be added and their influence.
7. Learn how to handle soaking and bleaching, to obtain greater durability of the bread.
8. Know different types of Poolish (Wheat, Rye) and their advantages.
9. Evaluate how quality is affected by resting the dough.
10. Dough preparation and evaluation (types of kneading, fermentation times, cooking, etc.).
11. Know different types of ovens. Advantages and differences between them.
12. Adapt the offer to the new demand for bread.
13. Discover healthy, nutritious, digestible and functional breads (Concept of well-being).

#### Recommended reading

Documentação a facultar pelos especialistas externos.

#### Teaching and learning methods

The teaching and learning methods will involve the following methodologies:

- In-person session (24 hours): practical sessions in an industrial kitchen context (hands-on sessions);
- Synchronous classes (12 hours): mentoring work;
- Asynchronous work (18 h): autonomous work of the student. Trainees must develop a new bread, considering the knowledge acquired during the training session.

#### Assessment methods

1. Evaluation I - (Regular, Student Worker) (Final)
  - Intermediate Written Test - 20% (Mini-tests to be carried out throughout the training)
  - Experimental Work - 50% (Development and elaboration of a new bread)
  - Presentations - 30% (Oral presentation of the work developed)
2. Evaluation II - (Regular, Student Worker) (Supplementary, Special)
  - Final Written Exam - 100% (Final written exam covering the topics taught)

#### Language of instruction

1. Portuguese
2. Spanish

#### Electronic validation

Elsa Cristina Dantas Ramalhosa	Vera Alexandra Ferro Lebres
28-10-2023	31-10-2023