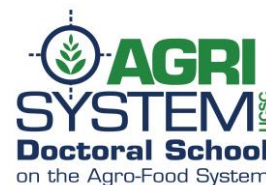




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Traditional and Next Generation Microbiology together as a tool for industrial problem-solving: case studies

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Course Aims

This course offers an exploration of classical microbiology (culture-dependent) and next-generation techniques (molecular biology, omics, flow cytometry and genomics) to solve real and potential industrial challenges. Through a series of case studies spanning different problem areas in different types of food industries: dairy, meat processing, bakery, agriculture and livestock industries.

The course aims:

- Understand the principles, significance and applications of classical and next-generation techniques for solving industrial microbiological problems.
- Analyze real case scenarios to identify analytical approaches best suited to different industrial challenges.
- Explore opportunities for interdisciplinary collaboration to improve problem-solving strategies in industrial settings.
- Develop critical thinking skills to evaluate the feasibility and effectiveness of integrating classical and next-generation techniques in specific industrial scenarios.

Methodology

The course will be developed through lectures and case study presentations. Students' grade will be based on their active involvement in class.

Course description

- Overview of traditional and next generation microbiology techniques
- Case study in the dairy industry
- Case study in the plant-based products industry
- Case study in the bakery products industry
- Case studies in the agriculture and livestock sector

Recommended texts

The teaching materials will include slides that will be made available to students after each lesson