

SCHOOL	ENVIRONMENT		
ACADEMIC UNIT	FOOD SCIENCE & TECHNOLOGY		
LEVEL OF STUDIES	BACHELOR OF SCIENCE		
COURSE CODE	FST304	SEMESTER	3
COURSE TITLE	FOOD MICROBIOLOGY		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercise, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>		WEEKLY TEACHING HOURS	CREDITS
Lectures		2	
Laboratory practice		3	
Total		5	9
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>General background, special background, specialised general knowledge, skills development</i>	Specialised general knowledge		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)			

LEARNING OUTCOMES

Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Guidelines for writing Learning Outcomes

The aim of Food Microbiology course is for students to develop an understanding on the general biology of the microorganisms found in foods including their growth characteristics, identification and pathogenesis as well as food poisoning, food spoilage, food preservation, and food legislation

Upon successful completion of the course students will:

- Have the expertise to perform microbiological analysis in food and evaluate their microbiological quality
- Be able to describe the characteristics of foodborne, waterborne and spoilage microorganisms based on the

preservation method used

- Be able to explain why microbiological quality control programs are necessary in food production
- Be able to establish and supervise a HACCP plan system
- Be able to choose the appropriate method of microbiological analysis in foods and analyze its results.
- Be able to evaluate and apply new methods for the microbiological analysis of foods and compare their results with those of standard methods and procedures used.
- Choose the proper method for microbiological analysis and evaluate its results
- Evaluate and apply new methods of analysis of food commodities and compare their results with those of standard methods.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Adapting to new situations
Decision-making
Working independently
Team work
Working in an international environment
Working in an interdisciplinary environment
Production of new research ideas

Project planning and management
Respect for difference and multiculturalism
Respect for the natural environment
Showing social, professional and ethical responsibility and sensitivity to gender issues
Criticism and self-criticism
Production of free, creative and inductive thinking

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Others...
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- Working independently
- Decision-making
- Solving problems
- Projects

SYLLABUS

Lectures

- Pathogenic Bacteria, Viruses and Fungi in Food and Water Supplies
- Sources of Food Contamination and Poisoning – Factors Influencing Microbial Growth in Food
- Microorganisms Used in Food Fermentations
- Microbial Enumeration in Food Products (Selective and Differential Media, Enrichment Culture Technique)
- Microbial Challenges in the Food Chain (Production, Transfer, Storage)
- Microbial Industrial Enzymes
- Food Poisoning and Food Infection
- Regulations and Standards – Standard Methods in Food Microbiology

Laboratory Practice

- Growth of *Escherichia coli*, *Staphylococcus aureus*, *Bacillus cereus*, *Salmonella* sp., *Shigella* sp., *Listeria monocytogenes*, *Vibrio parahaemolyticus*, *Clostridium perfringens* (all ATCC strains) on selective and differential media.
- Microbiological Analysis of Canned Foods

Specifically-defined evaluation criteria are given, and if and where they are accessible to students.

Midterm and final exams

ATTACHED BIBLIOGRAPHY

1. Bibek Ray, Arun Bhunia (2013). Fundamental Food Microbiology, Fifth Edition. CRC Press
2. Martin R Adams, Maurice O Moss, Peter McClure (2016). Food Microbiology. Royal Society of Chemistry

Performance Statistics of the last 2years			
Grade (descending order)	absolute frequency	relative frequency %	sum of success rates per class
FOOD MICROBIOLOGY			
10	36	18%	18%
9	13	6%	24%
8	28	14%	38%
7	39	19%	57%
6	86	43%	100%
	202	100%	