



# UE5 Microbial diversity and microbial circulation in ecosystems



Niveau d'étude  
BAC +4



ECTS  
9 crédits



Composante  
UFR Sciences  
Vie Terre  
Environnement

## Présentation

### Description

The students will acquire practical and theoretical competences in microorganism diversity and phylogeny. They will use current methods available to analyze taxonomic and functional diversity of different groups of microorganisms in the environment, including soil, the human body and food. They will be able to assess the roles of microorganisms in ecosystem function and dysfunction as well as their movement among and within habitats.

#### Programm :

##### Lectures (20h)

Stress response and adaptation (6h).

Oxidative stress (2h).

Structural microbiology (2h).

Adaptation of soil microorganisms to biodegradation and resistance to different xenobiotics (2h).

Microbial ecology of soil systems disturbed by heavy metals (2h).

Antibiotics and alternatives (4h).

Transfer of antibiotic-resistant pathogenic bacteria between animals, the environment and humans (2h).

##### Tutorials (8h)

Analysis of articles (writing and oral presentation).

##### Practice (20h)



Stress response and adaptation studied using microbiological methods and molecular biology.

## Objectifs

Applying theoretical concepts of microbial ecology.

Conceiving and preparing experiments on microbial diversity and evolution.

Handling and following a protocol with respect to health, safety and sterility rules.

Obtaining, analyzing and validating experimental results to draw conclusions.

Analyzing, interpreting and reporting scientific data in microbial ecology in the context of current research, presenting them in English to a scientific audience.

## Heures d'enseignement

CM	Cours Magistral	20h
TD	Travaux Dirigés	8h
TP	Travaux Pratiques	20h

## Pré-requis obligatoires

Basic skills in microbiology and molecular biology.

## Compétences visées

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## Modalités de contrôle des connaissances

### Session 1 ou session unique - Contrôle des connaissances

Nature de l'enseignement	Modalité	Nature	Durée (min.)	Nombre	Coefficient	Remarques
	CC (contrôle continu)	CC : Ecrit et/ou Oral			9	



# Infos pratiques

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## Campus

➤ [Campus de Dijon](#)