

001-2-0009

Lectures (hrs./week)	Exercise (hrs./week)	Laboratory	Field Trip
3			

Prerequisite:

Undergraduate studies in Physics or Chemistry or Biology or Engineering.

Aims:

Introduction to basic physical concepts and phenomena in complex bacterial systems.

Keywords:

Pattern formation, collective motion, swarming, bacteriocins, social bacteria.

Course contents:

1. Bacterial survival strategies
Introduction to bacterial systems
From the individual to the group
The role of cell shape
Survival techniques with no adaptation
Adaptation strategies
2. The *Paenibacillus dendritiformis* species: a model-system
Discovery and classification
Pattern formation - the idea behind harsh conditions
Strains and variability
3. Colonial interactions
Interactions with no competition
Deadly competition between colonies

Requirements:

- It is required to attend at least 80% of the classes
- The final grade will be based on home assignments or exams.

Lecturer:

Avraham Be'er

Literature:

References will be given during the course.