

# Statistical and Biological Physics

Module No.: MN-P-SP-StatBio, MN-P-PN-StatBio, MN-P-WaMa

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## Course: Introduction to Biophysics

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Category	Type	Language	Teaching Hours	CP	Semester
Core Course	Lecture	English	4+2	9	WiSe

### Requirements for participation:

Bachelor in Physical Sciences

### Type of module examinations:

One oral examination at the end of the module

### Duration of the course:

1 semester

### Aims of the course:

Life as an interplay between physics and genetics; understanding how physical principles guide the behavior of biological cells and organisms; introduction into biophysical methods.

### Contents of the course:

- Introduction to molecular cell biology
- Random-walks in biology
- Mechanical forces in molecular and cellular biology
- Photophysics
- Signal transduction in nerve cells
- Genetic networks and decision making
- Physical methods for analysis of biological molecules and processes

### Recommended literature:

Phillips, R., Kondev, J., Theriot, J., Physical Biology of the Cell, Garland Science, New York, 2012