Modules:

physics700 **Elective Advanced Lectures**
physics720 **Applied Physics**
physics730 **Theoretical Physics**

Course: Physical biology (T/A)

Course No.:

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture with exercises	English	4+2	8	ST

Requirements:

Preparation:
Advanced statistical mechanics

Form of Testing and Examination:
Oral examination

Length of Course:
1 semester

Aims of the Course:
Acquaintance with basic concepts of molecular and evolutionary biology; understanding of statistical issues arising in the analysis of sequence data and the application of methods from statistical physics addressing them.

Contents of the Course:
Statistics of the genome
Sequence analysis and sequence alignement
Evolutionary theory and population genetics
Theory of bio-molecular networks

Recommended Literature:
J.H. Gillespie, Population Genetics: A concise guide (Johns Hopkins University Press, 2004)
R. Durbin, S.R. Eddy, A. Krogh, G. Mitchison, Biological Sequence Analysis: Probabilistic Models of Proteins and Nucleic Acids (Cambridge University Press, 1998)
F. Kepes, Biological Networks (World Scientific, Singapore 2007)
D.J. Wilkinson, Stochastic Modelling for Systems Biology (Chapman&Hall, 2006)