Molecular Biology
Prof. Irene Bozzoni
LM- Fisica
aa 2016-17

Place and dates
Tuesday and Thursday (2.00-4.00 p.m.)
Auletta seminari, ground floor - building CU026
Biology and Biotechnology Department "Charles Darwin"

Program

- Biology in the 20th century and the birth of Molecular Biology
- DNA structure and replication
- Structure and evolution of genes and genomes
- Cell structure and cell cycle
- Chromatin structure and transcription
- Methods for the study of nucleic acids (Southern/Northern, PCR, sequencing)
- Principles of Genetic Engineering: 1) DNA cloning; 2) Applications of Genetic Engineering to basic research and biomedicine
- Protein translation
- mRNA biogenesis and maturation: polyadenylation and splicing
- Alternative splicing and human diseases
- non coding RNAs: microRNAs and long non coding RNAs
- RNA interference and applications in medicine
- Sequencing and Bioinformatics in Molecular Biology
- Cellular model systems for the study of differentiation (myogenesis)
- Stem cells and therapeutic applications
  - Students' seminars

Examination procedures

Students will be evaluated based on the seminar presentation together with an oral examination.

Teaching material

PP presentations on the e-learning platform
Text books:
Biologia Molecolare del gene – VII edizione – Watson et al., Ed. Zanichelli (english version available – Molecular Biology of the Gene)
Biologia Molecolare – R.F. Weaver – Mc Graw Hill –
Il gene X – B. Lewin et al. (Zanichelli)