

# COURSE DETAIL

## MOLECULAR BIOLOGY

**Country**

Netherlands

**Host Institution**

Maastricht University - Center for European Studies

**Program(s)**

Biological and Life Sciences, Public Health and Pre-Med, Biological and Life Sciences, Maastricht

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Biological Sciences

**UCEAP Course Number**

113

**UCEAP Course Suffix****UCEAP Official Title**

MOLECULAR BIOLOGY

**UCEAP Transcript Title**

MOLECULAR BIOLOGY

**UCEAP Quarter Units**

6.00

**UCEAP Semester Units**

**Course Description**

This course provides students with detailed knowledge about the molecular processes in cell signaling and control of gene expression. Topics include: intracellular signaling pathways; chromatin structure and remodeling; recruitment and assembly of transcription factors; eukaryote mRNA synthesis, processing, modification, stability and translation; stem cells and reprogramming; and the culmination of the above factors that drive common complex human disease. The tutorials are partially in Problem Based Learning (PBL) and multiple-choice format, with exercises designed to provide a perspective of how cutting edge molecular biological techniques are applied to tackle major research questions in modern biomedical research. Students are acquainted with the best-characterized cell signaling mechanisms in eukaryotic cells, gene structure/function, and different gene regulatory mechanisms (chromatin remodeling and (post)transcriptional regulation) in prokaryotes and eukaryotes. The course covers how molecular biology, when used in combination with other biological disciplines (e.g. biochemistry, genetics, imaging), can provide tools to understand (diagnostics) and intervene (therapy) in the cellular complexity of human disease. Prerequisites for this course are Cell Biology and Genetics.

**Language(s) of Instruction**

English

**Host Institution Course Number**

BIO3001

**Host Institution Course Title**

MOLECULAR BIOLOGY

**Host Institution Campus****Host Institution Faculty**

Maastricht Science Program

**Host Institution Degree**

## Host Institution Department

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