

## COURSE DETAIL

### HUMAN GENETICS

**Country**

Denmark

**Host Institution**

University of Copenhagen

**Program(s)**

University of Copenhagen

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Biological Sciences

**UCEAP Course Number**

153

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

HUMAN GENETICS

**UCEAP Transcript Title**

HUMAN GENETICS

**UCEAP Quarter Units**

6.00

**UCEAP Semester Units**

4.00

## Course Description

This course gives students a thorough understanding of pioneering and contemporary research in human genetics with emphasis on human genetic diseases. The course is organized into the following topics: approaches to the analysis of human monogenic disease; polygenic diseases; quantitative genetics; low penetrance alleles; genetic variation in humans; patterns of inheritance in humans; cytogenetics; clinical genetics and genetic counselling; genome stability, fragile sites, translocations, chromosome fusions; strategies for constructing gene editing, zinc finger nucleases (ZFNs), transcription; activator-Like Effector Nucleases (TALENs), the CRISPR/Cas system, and engineered meganuclease re-engineered homing endonucleases; strategies for performing transient gene knockdown, shRNA, RNAi, and morpholino oligonucleotides; animal models and transgenesis; gene therapy; design of research projects and writing of research proposals; cancer genomics; genome-wide association studies; personalized medicine based on genetic profiling.

## Language(s) of Instruction

English

## Host Institution Course Number

NBIK15014U

## Host Institution Course Title

HUMAN GENETICS

## Host Institution Campus

Science

## Host Institution Faculty

## Host Institution Degree

## Host Institution Department

Biology

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