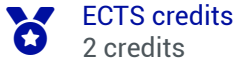


Introduction to Bioethics



In brief

➤ **Course language:** English

Presentation

Learning objectives

At the end of this course, students will be able to understand the fundamental ethical principles governing biomedical research and practice, critically analyze contemporary ethical challenges in biomedical engineering, and apply ethical frameworks to navigate complex decisions involving genetic technologies and innovations in healthcare.

Description of the programme

This course provides students with a comprehensive introduction to bioethics and the ethical challenges emerging from advances in biomedical engineering and biotechnology. As biomedical engineers, students will encounter complex ethical dilemmas throughout their careers—from decisions about patenting genetic discoveries to navigating the implications of gene therapy and novel medical technologies. This course equips them with the ethical frameworks, international principles, and regulatory knowledge necessary to make informed decisions and contribute responsibly to the development of biomedical innovations.

I. INTRODUCTION TO BIOETHICS

A. Definitions of bioethics and biomedical ethics

1. Definitions and evolution of concepts
2. Key dates and data

B. Laws and principles of bioethics

1. International principles of bioethics
2. French bioethics laws

II. BIOMEDICAL ENGINEERING AND BIOETHICAL CHALLENGES

A. Patentability of human life

1. Patentability of human genes: controversies
2. Authorized patentability

B. Exploitation of DNA by science

1. Collection of human genetic data
2. Genetic databases and testing

C. Eugenics, gene therapy and genetic scissors (CRISPR cas-9)

1. Definition of eugenics and eugenic practices
2. Discovery of genetic scissors: the CRISPR-cas9 method

D. Human cloning at the international level

1. Definition and international prohibition
2. Possible alternatives: CSA and iPS cells

Teaching team

Cynthia OCHIN ([✉ cynthia.ochin@hotmail.fr](mailto:cynthia.ochin@hotmail.fr))

Total des heures

CM	Master class	16h
TD	Directed work	12h
		4h

Useful info

Name responsible for EU

Lead Instructor

Julien Fade

✉ julien.fade@centrale-med.fr