COURSE OUTLINE

1. GENERAL

SCHOOL	NATURAL SIENCES		
ACADEMIC UNIT	BIOLOGY		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	**BIO_EHB**	**SEMESTER**	**7**
COURSE TITLE	**APPLIED ETHICS AND BIOETHICS**		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**CREDITS**
	Lectures	3	3
COURSE TYPE	Specialised general knowledge		
PREREQUISITE COURSES			
LANGUAGE OF INSTRUCTION and EXAMINATIONS	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
COURSE WEBSITE (URL)	http://www.biology.upatras.gr/		

2. LEARNING OUTCOMES

Learning outcomes

Upon course completion, the student will be able to know the following subjects satisfactorily:

1. the main philosophical and moral questions from the practical results of knowledge, derived from the development of the major bio-scientific-technological achievements, and in relation to their moral implications extended from the experimental organisms to human beings.
2. the main bioethical principles and their legal framework for limiting the risks from the applications of new biotechnologies such as assisted reproduction, cloning, genetically modified organisms, stem cells, genetic redesign of life, procedural genetics, artificial intelligence etc.

General Competences

- Working independently
- Team work
- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Production of free, creative and inductive thinking
- Decision-making
- Criticism and self-criticism
- Adapting to new situations

3. SYLLABUS

I. 1. General Introduction: From moral theory to meta-ethics and transition to applied ethics, with special emphasis on the emergence of the epistemological autonomy of applied ethics as an area of conjugation of science, law and philosophy. 2. Introduction to the applied ethics method as a weighting field of positive values in the context of genuine moral dilemmas. 3. Introduction to the fields of bioethics. 4. Introduction to Bioethics Institutions.

II. Bioethics of genetically modified plants / food (indicatively, plant biotechnology - creation of plants resistant to pathogens, and environmental stresses - transgenic plants and diet / taste) Bioethics questions from the implementation of the above achievements (impacts on humans and the environment, social questions, patent issues, biosecurity issues).

III. Bioethical reference to assisted reproduction (indicatively, at what embryonic stage the beginning of life is identified, embryo selection, prenatal control, termination of pregnancy, sperm / egg donors, surrogate mothers), the use of stem cells (for example, embryonic stem cells, stem cell banks, sex selection, immortality and euthanasia in procedural genetics.

IV. Molecular biotechnology and bioethical issues: Definitions and examples. Historical data. Ethical

codes, basic principles of biomedical ethics ("Belmont text") and bioethics committees. Basic principles of research activity. Instructions for researchers conducting clinical studies (informed consent of participants, personal patient data and anonymity, rules and ethics committees). Patents. The Asilomar Conference on Recombinant DNA. Cloning - Transplants - Gene therapy and moral dilemmas. Genetic redesign and children on demand - Eugenics. Mapping human genome, and tissue and gene ownership. Personalized medicine and pharmacogenomics. Biotechnology Law, and protection of personal genetic data. Infectious diseases and protection of public health.

V. Bioethics on experimental animal models, and good practice in the use of experimental animals: 1. Genetic engineering of animals used in science. 2. Animal welfare (housing). 3. Animal management (phenotype issues, experimental procedures, pain, suffering and strain, duration of studies, final rejection and euthanasia), reports to the International Society for Applied Ethology and the World Organization for Animal Health.

VI. Neuro-ethics (referring to ethical dilemmas arising from the rapid growth of neuroscience research, and related to the possible application of new diagnostic and therapeutic approaches, not only in illness but also in health, such as improvement of cognitive abilities, mental mood, emotion etc.)

VII. Bioethics of neurotechnological applications, artificial intelligence ("evolving" machines), bio-robotics, bio-governing ("digital citizen"), "neuro-politics", geno-technologically pursued "superman" etc.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face-to-face. Discussion during lecture. Bibliographic projects.	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	Face-to-face. Discussion during lecture. Bibliographic projects.	
TEACHING METHODS	***Activity***	***Semester workload***
	Lectures	26
	Study and analysis of bibliography	10
	Independent study	39
	Course total	**75**
STUDENT PERFORMANCE EVALUATION	Written exams at the end of the semester. Grading scale: 1-10 Passing grade: 5	

5. ATTACHED BIBLIOGRAPHY

Suggested bibliography:

Notes

Related academic journals: