Teaching guide

IDENTIFICATION DETAILS

Degree:	Biomedicine
Scope	Biology and Genetics
Faculty/School:	Experimental Sciences
Course:	ETHICS AND BIOETHICS
Type:	Compulsory
ECTS credits:	6
Year:	3
Code:	2160
Teaching period:	Fifth-Sixth semester
Subject:	Social Aspects of Biomedicine
Module:	Social Aspects of Biomedicine
Teaching type:	Classroom-based
Language:	Spanish
Total number of student study hours:	150

SUBJECT DESCRIPTION

The subject of Ethics and Bioethics of the Degree in Biomedicine will deal with the specific social dimension that emerges from the exercise of this area of experimental and health sciences. The scientist cannot remain oblivious to the ethical and social implications that arise from his work and from the development of new technologies applied to the field of life. That is why this course will serve as an introduction to the study of bioethics, as an academic discipline.

Currently, Biomedicine is one of the fastest evolving scientific-economic sectors. The new applications that this science develops have a direct impact on fields such as health, economics and others, more or less, related, all of them affecting human life in a very direct way. The capacity of this professional area to influence so many aspects of society clearly indicates that scientists cannot remain oblivious to the ethical and social consequences that their

activities entail. Consequently, students of the Biomedicine degree must train their sensitivity to detect the possible implications (beyond the purely scientific ones) of their work and sufficient knowledge to be able to analyze them in an interdisciplinary way and evaluate them from an ethical-social point of view. The subject of Ethics and Bioethics aims to provide students with this sensitivity and knowledge regarding the issues closest to their professional practice.

GOAL

The objective of the Ethics and Bioethics course is to be able to provide students with a basic framework of the main current bioethical issues from a triple scientific, philosophy/ethical and social/legal perspective and, thus, to allow students to grasp the human dimension of biotechnologies and their prudent application, taking into account ethical/legal principles and norms while respecting the dignity of the person.

The specific aims of the subject are:

To know the scientific-experimental bases as a prior step to moral reflection on the main bioethical issues related to the area of Biomedicine.
Get in touch with the legislative framework (national and supranational) that regulates aspects related to biomedical experimentation.
Develop the philosophical (metaphysical, anthropological and ethical) bases necessary to be able to develop a rational and rigorous self-value judgment on bioethical issues of relevance in the area of Biomedicine.

PRIOR KNOWLEDGE

The student must have basic knowledge of cellular and molecular biology, classical and molecular genetics and philosophical anthropology in order to be able to successfully take advantage of the subject.

COURSE SYLLABUS

THEME 1: INTRODUCTION TO BIOETHICS
1.1 ELEMENTS OF FUNDAMENTAL ETHICS

Definition and object of study of Ethics.
Moral analysis and practical reason.
Voluntary and involuntary action.
Purpose, intention and circumstances.
Good and evil in Ethics and their relationship with truth.
Main ethical currents: moral relativism, subjectivism, nihilism, philosophical realism.
Fundamental provisions of the human person and his dignity.
The conscience and judgment of practical reason.

1.2: FUNDAMENTALS OF BIOETHICS.

Bioethics as ethics applied to life.

Historical approach to the origins of Bioethics.
Rational and interdisciplinary discipline.
Fundamental Principles of Ethics and Bioethics.
Role of Anthropology in Bioethics: different bioethical currents and paradigms (utilitarianism and personalism).
Anthropotechniques and transhumanism.

TOPIC 2: HUMAN GENOME AND GENETIC ENGINEERING.
2.1 Review of basic concepts.

Human Genome Project.
Genome editing techniques in human beings (CRISPR/Cas9, gene therapy, editing the genome of human embryos...).

2.2 Legislation regarding the confidentiality of genetic information and patents on genetic sequences.
2.3 Analysis of the bioethical implications:

Confidentiality of genetic information
Reductionism and biological determinism
Eugenics.

TOPIC 3: EMBRYONIC DEVELOPMENT.
3.1 Analysis of the main stages of the embryonic development process from fertilization to the fetal phase (Fertilization, Zygote, Embryo...).

Biological consequences.
Origin of the term pre-embryo and its implications at the legislative level.

3.2 Anthropological and ethical status of the human embryo.

Main objections (implantation, twinning, brain birth, etc.).
Bioethical implications of considering the embryo as a human being.

3.3 Legislation related to embryos in its different fields of application.
TOPIC 4: ASSISTED REPRODUCTION, STEM CELLS AND CLONING.
4.1. Assisted reproduction techniques and their bioethical implications.
4.2. What are stem cells?

Review of the terminology used in the field.
It's cells.
Adult stem cells.
iPS cells.
Possible applications of various types of stem cells.
Background and types of cloning depending on the technology to be used and its purposes.
Dolly the sheep. Biological consequences of clone generation in higher organisms.

4.3 Analysis of the bioethical implications surrounding the use of stem cells of various origins (embryonic, adult, iPS stem cells) and around cloning for reproductive or therapeutic purposes.
TOPIC 5: EXPERIMENTATION WITH HUMAN BEINGS AND ANIMALS.
5.1 Experimentation at the embryonic stage of human life (interspecies chimerism, pseudoembryos...).

Adult experimentation of human life.
Clinical Trials.
Main ethical and legal codes relating to this matter.

5.2 Animal experimentation (Main contributions, convenience...).
THEME 6: BIOETHICS OF EMERGING TECHNOLOGIES.
Bioethical analysis of emerging challenges in bioethics such as neuroethics.

EDUCATION ACTIVITIES

The course will follow a methodology based on master classes accompanied by seminar times where students will have the opportunity to present articles and practical cases related to the issues to be addressed in classes and discuss them. Each topic will present its key contents through the master class. In the last of the classes where each topic will be developed, students (in groups of 3 people, approximately) will present the analysis of a practical case related to what was discussed during the previous classes and that puts into practice what they learned in these classes. Each case study will be prepared by two groups and after the presentation of the case by each of them, a discussion will be established open to the entire class. After this discussion, each group will provide the teacher with a dossier specifying a series of previously established points (including, in addition, the discussion exercise carried out between the entire class later). Throughout the course, each group will only analyze one case study. At the beginning of the course, students will be able to choose which practical case they will work on later and will agree on this with the teacher.

DISTRIBUTION OF WORK TIME

TEACHER-LED TRAINING ACTIVITIES	INDIVIDUAL WORK
60 Horas	90 Horas

LEARNING RESULTS

Develop attitudes of social responsibility in personal performance that contribute to the formation of a better professional in the field of biomedicine.

Detect the link between the current world and historical events and recognize the need to locate the historical framework of any event in order to understand it.

Develop attitudes of respect and dialogue with other cultures and religions in the search for truth.

Acquire the necessary tools to identify aspects of improvement both in the personal and academic spheres, associated with the field of biomedicine.

Know the ethical foundations and principles necessary to guarantee quality and excellence in the field of biomedical research, as well as to protect and preserve the integrity of subjects participating in clinical studies and of the data obtained from those studies.

Manage current regulations and legislation that regulate biosanitary processes and products.

To know the meaning and foundation of human dignity, the fundamental dimensions of the human being and the evolution of different anthropologies throughout history, in addition to their practical implications in relation to the field of biomedicine.

SPECIFIC LEARNING RESULTS

Describe the main current scientific topics with a clear bioethical dimension.

Analyze the biological, anthropological and ethical aspects involved in the various topics studied.

Discuss, in the light of the data provided by scientific and philosophical reflection, the main bioethical issues.

Confront diverse positions and bioethical options.

Describe and apply current regulations to the analysis of biomedical cases with a bioethical component.

Critically analyze the theses proposed in scientific or philosophical texts related to the topics of bioethics discussed in the classroom.

Analyze from a multidisciplinary perspective real or hypothetical cases related to bioethical issues developed in the classroom.

LEARNING APPRAISAL SYSTEM

The subject will be evaluated by taking exams in which the student demonstrates the knowledge acquired in the master classes. Your participation in class seminars will also be taken into account. In summary, the evaluation of the subject will be carried out as follows:
1) Theory Exams: 75%. You will evaluate learning outcomes RA1, 2, 5 and 7.
2) Preparation, analysis and resolution of practical cases: 25%. You will evaluate learning outcomes RA2, 3, 4, 5, 6 and 7.
More specifically, the ratings are distributed as follows:
1) With regard to the evaluation of the Theory, at the end of the first semester there will be a partial release. The score needed to release the content of this partial is 5. If this minimum or higher grade is obtained, the student will only be examined in the final exam of the syllabus developed during the second semester. To pass this exam, you must also obtain a minimum of 5. The final Theory grade will be distributed equally between the partial exam and the final exam. If the student does not obtain a 5 or more in the partial exam, in the final exam they must examine the entire subject (and, again, obtain a minimum of 5).
2) If you do not pass the Theory section in the ordinary call, for the extraordinary one, you must attend the entire course. The score of the partial exam will not be saved for this second call of the year.
3) With regard to carrying out the practical case, it will be developed in groups of 3 students and the teachers (in addition to the details mentioned in the Training Activities section) will give more details about it at the beginning of the course.

4) If the resolution of the practical case is not exceeded in the ordinary call, the teachers of the subject will commission a new practical case to be analyzed and presented to them as a court on the date that will be indicated to the students well in advance.
5) To pass the subject, it will be necessary to obtain at least a grade of 5 both in the Theory section (as described above) and in the Practical Case section.
6) Additionally, during the course of the classes, teachers may commission the reading, analysis and discussion of texts and ask students to prepare a summary/comment on them. The grades obtained in this regard will serve to outline the final grades of the subject.
7) Active and respectful participation in the classroom (either during the development of theoretical classes or during the presentation and discussion of practical cases) will be taken into account when outlining final grades (access to MH, for example).
8) When submitting any writing, the spelling correction criteria of the Evaluation for Access to the University (EVau) exams of the Community of Madrid applied in recent years will be applied. According to these criteria:

Each error in the spelling will subtract 0.25 points from the final grade of the exercise and the errors in the accents 0.15 points, up to a maximum of 4 points in both cases.
The same repeated fault will be taken into account only once.
The repetition of misspellings may even result in the qualification of suspense.
Abbreviations, syntactic and grammatical errors will be penalized... Plagiarism, as well as the use of illegitimate means in evaluation tests, will be sanctioned in accordance with the University's Evaluation Regulations and Coexistence Regulations.

Students in second and subsequent enrollment will be able to take advantage of an alternative evaluation system in which the practical case will be carried out individually and tutored rather than in a group. To take advantage of this evaluation system, interested students should contact the teachers at the beginning of the course.

ETHICAL AND RESPONSIBLE USE OF ARTIFICIAL INTELLIGENCE

1.- The use of any Artificial Intelligence (AI) system or service shall be determined by the lecturer, and may only be used in the manner and under the conditions indicated by them. In all cases, its use must comply with the following principles:
a) The use of AI systems or services must be accompanied by critical reflection on the part of the student regarding their impact and/or limitations in the development of the assigned task or project.
b) The selection of AI systems or services must be justified, explaining their advantages over other tools or methods of obtaining information. The chosen model and the version of AI used must be described in as much detail as possible.
c) The student must appropriately cite the use of AI systems or services, specifying the parts of the work where they were used and describing the creative process followed. The use of citation formats and usage examples may be consulted on the Library website(https://www.ufv.es/gestion-de-la-informacion_biblioteca/).
d) The results obtained through AI systems or services must always be verified. As the author, the student is responsible for their work and for the legitimacy of the sources used.
2.- In all cases, the use of AI systems or services must always respect the principles of responsible and ethical use upheld by the university, as outlined in the Guide for the Responsible Use of Artificial Intelligence in Studies at UFV. Additionally, the lecturer may request other types of individual commitments from the student when deemed necessary.
3.- Without prejudice to the above, in cases of doubt regarding the ethical and responsible use of any AI system or service, the lecturer may require an oral presentation of any assignment or partial submission. This oral evaluation shall take precedence over any other form of assessment outlined in the Teaching Guide. In this oral defense, the student must demonstrate knowledge of the subject, justify their decisions, and explain the development of their work.

BIBLIOGRAPHY AND OTHER RESOURCES

Basic

Greece, S. Bioethics Manual 2009. BAC

Lucas Lucas, R. Explain bioethics to me: an explanatory guide to the most controversial issues about human life 2005 Word

Gloria María Tomás y Garrido, María Elena Postigo Solana (editors). Personalist Bioethics: Science and Controversies 2007, International University Editions

AA.VV. Miscellaneous scientific, humanistic or informative press articles Miscellaneous

Additional

Andorno, R. Bioethics and Dignity of the Person Tecnos D.L, 1998
(Andorno, R. Bioethics and Dignity of the Person Tecnos D.L, 1998 , ||Ciccone, L. Bioethics: History, Principles, Questions Word, 2005)

Melendo Granados, T. Human Dignity and Bioethics Eunsa, 1999