

Biotechnology and Society

Code: 100970
ECTS Credits: 3

Degree	Type	Year	Semester
2500253 Biotechnology	OB	3	1

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

Name: Josep Espluga Trenc
Email: JosepLuis.Espluga@uab.cat

Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: No

Other comments on languages

In case of Erasmus students, the first month the classes could be made in Spanish on demand.

Prerequisites

There are no prerequisites to follow the course successfully.

Objectives and Contextualisation

The main objective of this course is to systematically reflect on some of the main social debates generated by the new biotechnologies and their applications. More specifically, it is intended to learn:

- Basic sociological concepts.
- Theorizing the type of society in which the biotechnologies appear and develop.
- Learning theoretical knowledge to interpret social responses to biotechnology.
- Analyzing the political, economic, social or cultural constraints that influence the development of biotechnologies.
- Reflecting on the relationship between science, technology and society.
- Basics of bioethics.

Other objectives of the course are:

- Sociological reasoning, discussion and exposition of ideas about social reality in a clear and precise way.
- Developing team work skills.

Competences

- Adopt clear, objective scientific criteria in order to project a positive, transparent image of biotechnology to economic, political and social agents.
- Make an oral, written and visual presentation of ones work to a professional or non-professional audience in English or in one's own language.
- Read specialised texts both in English and ones own language.
- Reason in a critical manner
- Search for and manage information from various sources.
- Think in an integrated manner and approach problems from different perspectives.
- Work individually and in teams

Learning Outcomes

1. Analyse the social context, the social structure and the principal social actors involved in biotechnology and its application.
2. Explain the debates on the risk society and the social perception of science and technology, and the systems of cultural and ideological values in which these take place.
3. Make an oral, written and visual presentation of ones work to a professional or non-professional audience in English or in one's own language.
4. Read specialised texts both in English and ones own language.
5. Reason in a critical manner
6. Search for and manage information from various sources.
7. Think in an integrated manner and approach problems from different perspectives.
8. Work individually and in teams

Content

The course will provide knowledge and learning on the following topics:

1- Basic concepts of sociology and characterization of contemporary society

1.1. Nature and society. Individual and society. Social structure, norms and values. Social inequality and power. Ideological paradigms and political systems.

1.2. From traditional society to industrial and post-industrial society. The risk society and the information society. Globalization and the emergence of new biotechnologies.

1.3. Social perception of new biotechnologies: Applications to health, reproduction, food, environment, military, arts, etc.

1.4. Map of social conflicts and biotech controversies

2- The social perception of risks of new biotechnologies

2.1. Risk, danger and uncertainty. Conceptual definitions.

2.2. Main 'actors' of conflicts around biotech risks.

2.3. The social perception of risk: dimensions of health, environment, economic, socio-cultural and political-institutional.

2.4. Science and policy in risk management: Risk assessment and the debate on the precautionary principle.

3- Proposals from bioethics

3.1. Technoscience and bioethics.

3.2. Religious bioethics and secular bioethics. Conceptions of life and society in dispute.

3.3. Principality, definitions and critiques. The principles of bioethics.

3.4. International conventions and regulation of bioethics.

4- Social conflicts around biotechnology: Human health and reproduction

4.1. Predictive medicine. Genetic testing and diagnosis. Genetic counselling and the debate on eugenics and social discrimination.

4.2. The debate on human nature (culture / upbringing). Perfection, genetic improvement, hyperpaternity and transhumanism.

4.3. Regenerative medicine. Stem cells, cloning and reprogramming. Impacts on family configuration and embryo status debate.

4.4. Replacement of human organs, cell banks and supernumerary embryos. Gene therapy.

5- Social conflicts around new biotechnologies: Agri-food system

4.1. Transgenic plants and seeds. Genetic engineering, recombinant DNA and genetic editing. The debate on coexistence.

4.2. Impacts on health and the environment vs socio-economic, political and cultural impacts.

4.3. Biopiracy and extractivism. Exploitation of individuals and groups. The debate over the patent system and the commercialization of life.

4.4. Controversies over agri-food models. Sustainability, agroecology and food sovereignty vs. export agro-industrial system.

Methodology

The subject will have the following teaching methodology:

1- Theoretical classes

During the course, teachers will present the main concepts and theoretical frameworks for each unit of study.

2- Seminars

The seminars will consist of the discussion, exposition and debate of a series of selected readings. At the beginning of the course the teacher will provide these readings and the calendar of discussions and debates.

3- Public presentations

Throughout the course each student will have to prepare a public presentation based on the materials of discussion and debate. These presentations will be made in groups, following a calendar that will be established at the beginning of the course.

4- Student's self-organization

Reading works: Each student will have to do an individual work based on the discussed texts, complemented with other sources obtained by the students.

5- Team work

The students will be organized in groups of 4 participants to carry out discussions of readings, search for information and public presentations throughout the course.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Theoretical classes	18	0.72	1, 2
Type: Supervised			
Public presentations	1	0.04	3
Seminars	4	0.16	3, 4, 5
Type: Autonomous			
Self-organized work of the student	30	1.2	6, 5
Team work	21	0.84	1, 2, 7, 8

Assessment

The evaluation of the subject will consist of the following parts:

- a) Individual work of analysis of readings and theoretical reflection (50% of the final mark)
- b) A group presentation (face-to-face or virtual), of which a written summary must be submitted (30% of the final mark)
- c) Individual work of discussion and definition of concepts (glossary) (20% of the final mark)

At the beginning of the course the professor will give detailed directions on how to do each activity. To participate in the recovery exam, the students must have been previously evaluated in a set of activities whose weight equals to a minimum of two thirds of the total grade of the subject. Therefore, students will obtain the "Non-Valuable" qualification when the assessment activities carried out have a weighting of less than 67% in the final grade.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Discussion and debates in the classroom	20%	0	0	1, 2, 7, 8
Individual reflection on reading works	50%	0	0	1, 6, 4, 5
Team presentation	30%	1	0.04	3, 8

Bibliography

Main references:

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Complementary references:

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Software

Not necessary