

Degree programme	Type	Course
Science, Technology and Humanities	OP	4

Contact lecturer

Name : Miquel Carandell Baruzzi

Email : miquel.carandell@uab.cat

Teaching staff

Carlos Tabernero Holgado

Group languages

You can consult this information at the [end](#) of the document.

Prerequisites

None.

Objectives

Objectives and contextualization

History of Genetics is taken in the 4th year of the Degree of Genetics and is part of the group of optional subjects.

The main objectives are:

Introduce the student to the consideration and experimentation of history as a vehicle for reflection and cultural construction, as an instrument of research, documentation and popularization, and as a pedagogical tool in the field of science.

Within the specific scope of the history of genetics, give the student the necessary tools to identify and critically analyze the main historiographical currents related to genetics.

Introduce the student to the knowledge of the processes of generation, circulation, communication and management of scientific (genetic) knowledge, as well as his impact on socio-cultural transformations throughout history.

Introduce the student to the analysis of the role and the situation of genetics and their social relations today and throughout history.

Consider the social, cultural, strategic and economic importance of genetics and genomics in the life sciences, health and society.

And thus, give the student the necessary tools to synthesize, from the historical consideration of genetics, a perspective of the current and future reach of this science.

Learning outcomes

1. Be able to analyse and synthesise.
2. Develop self-directed learning.
3. Reason critically.
4. Use and manage bibliographic information, or computer- or internet-based resources within the area of study, in the first languages and in English.
5. Synthesize, based on the historical advance of genetics, a perspective of the current and future scope of this science.
6. Communicate effectively orally and in writing.
7. Know that in the past, an illicit use of genetics has been made to promote racist ideologies.

Contents

The course will begin with an introductory session aimed at familiarizing students with the characteristics, objectives, and basic practices of the discipline of the history of science, as well as the place of the history of genetics within it.

From there, the course is divided into four distinct blocks:

- 1.- Heredity throughout history: concepts and sociocultural relationships (up to the 18th century).
- 2.- Evolution and the pillars of contemporary biology (19th century).
- 3.- From Mendel to molecular biology, via the Synthetic Theory of Evolution: genetics and the historical view of life in the 20th century.
- 4.- Genetics, genomics, and sociobiology: contemporary debates and challenges.

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
Independent study, consultation of bibliography and realization of works	39.75	1.59	1, 2, 3, 4
Solving problems and tasks autonomously, participation in discussions	11.25	0.45	1, 2, 3, 4, 6
Theoretical classes / Discussion sessions with TIC support	20.25	0.81	3, 4, 5, 7

The teaching methodology for this course will combine lectures with more dynamic, participatory activities, such as debates or workshops involving primary sources or audiovisual materials. In addition, students will be required to work independently to prepare for these activities by reading articles, watching films, or preparing for debates.

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.

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.

Assessment

Continuous assessment activities

Title	Weight	Hours	ECTS	Learning outcomes
Final group essay	40%	2	0.08	1, 2, 3, 4, 6
Portfolio	40%	1.75	0.07	1, 2, 3, 4, 5, 6, 7
Oral presentation	20%	0	0	1, 2, 3, 6

The course evaluation is continued in relation to:

Active participation in class discussions, which will include two short essays to be assigned during the semester (30% of the final grade each written essay).

A final and brief essay preparation (40% of final grade) about some concrete topic of the course's themes and competences, in which the students have to evidence their capacity of historically locating and critically analyzing any issue related with the history of genetics.

For the evaluation to be effective, the students must pass each of the different tests separately. Otherwise, they will be considered as \"non-assessable\". Students who have not passed the course may be submitted to a resit. To participate in the resit the student must have been previously evaluated of the thematic blocks, whose weight equals a minimum of two thirds of the total grade of the subject. In addition, to participate in the resit the student must have obtained at least 3.5 in the total grade of the subject.

Students who do not take the theoretical and practical assessment tests will be considered as not evaluated and will exhaust the rights of the registration of the subject.

On carrying out each evaluation activity, lecturers will inform students (on Moodle) of the procedures to be followed for reviewing all grades awarded, and the date on which such a review will take place.

Students will obtain a \"Not assessed/Not submitted\" course grade unless they have submitted more than 30% of the assessment items.

In the event of a student committing any irregularity that may lead to a significant variation in the grade awarded to an assessment activity, the student will be given a zero for this activity, regardless of any disciplinary process that may take place. In the event of several irregularities in assessment activities of the same subject, the student will be given a zero as the final grade for this subject.

Single evaluation:

If necessary, a single assessment test will be carried out for those students who, for justified reasons, cannot take the continuous assessment tests of the subject (essays and participation in class debates). This test will consist of the preparation, in person, at a date, time and classroom to be determined, of a brief final written essay (in this case 100% of the mark) in relation to a specific topic integrated into the contents and competences of the subject, and in which the student must demonstrate his/her ability to historically situate and critically analyze any problem related to the history of genetics. The teaching staff will assist students who require a single assessment with a specific tutorial related to each of the main blocks.

The students who take advantage of the single evaluation and who do not take the indicated test will be considered as \"Not evaluated\", exhausting the rights to enroll in the subject.

Bibliography

Bibliographic sources of digital access will be provided during the semester. However, below are reference works

Essential references

BARONA, J.L. *Història del pensament biològic*. València, Universitat de València, Col·lecció Educació-Materials, 2003 (1998)

GIORDAN, A. (coord.) *Conceptos de Biología*, vols. 1&2. Madrid, Labor, 1988

JAHN, I., LOTHER, R. y SENGLAUB, K. *Historia de la biología*. Barcelona, Labor, 1990

MORANGE, M. *A history of molecular biology*. Harvard: Harvard University Press; 2000.

Additional references (1)

BOWLER, Peter J. (1995) *Charles Darwin, el hombre y su influencia*. Madrid: Alianza..

DARWIN, Charles (1985) *The Origin of Species*. London: Penguin Classics (1859).

DARWIN, Charles (1988) *L'origen de les espècies*. Barcelona : Edicions 62 (1859).

DARWIN, Charles. *The Complete Works of Charles Darwin online* <<http://darwin-online.org.uk/>>

DOBZHANSKY, T., AYALA, F.J., STEBBINS, G.L., VALENTINE, J.W. (1983) *Evolución*. Barcelona: Omega

GLICK, Thomas (ed.) (1988) *The Comparative Reception of Darwinism*. Chicago : The University of Chicago Press (1ª ed. 1974).

MAYNARD-SMITH, J. y SZATHMÁRY, E. (2001) *Ocho hitos de la evolución*. Barcelona: Tusquets (Metatemas) (1ª ed. 1999).

TEMPLADO, Joaquín (1982) *Historia de las teorías evolucionistas*. Madrid: Alhambra, (1ª ed. 1974)

DE CHADAREVIAN, Soraya. (2002) *Designs for Life: Molecular Biology after World War II*. Cambridge: Cambridge University Press.

FABIAN, A.C. (ed.) (2001) *Evolución: sociedad, ciencia y universo*. Barcelona: Tusquets (Metatemas) (1ª ed. 1998).

JACOB, François (1973) *La lógica de lo viviente: una historia de la herencia*. Barcelona: Laia (1ª ed. 1970).

JACOB, François (1975) *Lógica de lo viviente e historia de la biología*. Barcelona: Laia (1ª ed. 1970).

KEVLES, Daniel; HOOD, Leroy (eds) (1992) *The code of codes. Scientific and social issues in the Human Genome Project*. Cambridge, MA: Harvard University Press.

MONOD, Jacques (2000) *El Azar y la Necesidad*. Barcelona, Tusquets (Metatemas) (1ª ed. 1970).

SCHRÖDINGER, Erwin (2001) *¿Qué es la vida?* Barcelona: Tusquets (Metatemas) (1ª ed. 1944).

WATSON, J.D. (STENT G.S., ed.) (1980) *The Double Helix*. Nueva York: Norton (1ª ed. 1968)

WATSON, J.D. (2004) *La Doble Hélice*. Barcelona: RBA (1ª ed. 1968)

APPLE, Rima D.; APPLE, Michael W. (1993) Screening Science. *Isis* 84(4): 750-754.

CRICHTON, Michael (1991) *Jurassic Park*. Londres: Arrow (1ª ed. 1990).

CRICHTON, Michael (1994) *Parque Jurásico*. Barcelona: Plaza & Janés (1ª ed. 1990).

ELENA, Alberto. (2002) Ciencia, Cine e Historia: de Méliès a 2001. Madrid: Alianza

FONT-AGUSTÍ, Jordi (coord.) (2002) *Entre la Por i l'Esperança: Percepció de la Tecnociència en la Literatura i el Cinema*. Barcelona: Proa.

NIETO GALAN, Agustí (2011) *Los públicos de la ciencia. Expertos y profanos a través de la historia*. Madrid: Marcial Pons.

SECORD, James (2004) *Knowledge in Transit*, *Isis* 95, 654-672

SHINN, Terry; WHITLEY, Richard (eds.) (1985) *Expository Science. Forms and Functions of Popularization*. Reidel: Dordrecht., pp. 3-28.

SNOW, Charles P. (1965) *Les dues cultures i la Revolució Científica*. Barcelona: Edicions 62 (1ª ed. 1959).

SNOW, Charles P. (1993) *The Two Cultures*. Cambridge: Cambridge University Press (1ª ed. 1959).

SPIELBERG, Steven (1993) *Jurassic Park*. Universal Pictures [DVD].

VV.AA. (1983). *Journal of Contemporary History* 18(3). [Monográfico sobre "cine e historia"].

VV.AA. (1989). *Sylva Clus* 8. [Monográfico sobre "cine e historia de la ciencia"].

VV.AA. (2006). *Fotogrames de ciència. Mètode* 48: 57-108. / *Anuario* 2006: 198-237 [Monográfico sobre "ciencia y cine"].

VV.AA. (2009). *Focus: Historicizing 'Popular Science'*. *Isis* 100(2): 310-368.

Additional references (2)

Rothfels, Nigels. *Savages and beasts. The birth of the modern zoo*. Baltimore: The Johns Hopkins University Press; 2002.

Cittadino, Eugene. *Nature as the laboratory. Darwinian plant ecology in the German empire, 1880-1900*. Dordrecht (Holland): Reidel publishing company; 1990.

Farber, Paul Lawrence. *The emergence of ornithology as a scientific discipline: 1760-1850*. Cambridge: Cambridge University Press; 1982.

Bowler, Peter J. *Theories of human evolution. A century of debate, 1844-1944*. Baltimore: The Johns Hopkins University Press; 1986.

Kay, Lily E. *Who wrote the book of life? A history of the genetic code*. Stanford, California: Stanford University Press; 1993

Worster, Donald. *Nature's economy. A history of ecological ideas*. 2nd edition. Cambridge: Cambridge University Press; 1994.

Bud, Robert. *The uses of life. A history of biotechnology*. Cambridge: Cambridge University

Weindling, Paul. *Health, race and German politics between national unifications and Nazism, 1870-1945*. Cambridge: Cambridge University Press; 1989.

Ellegard, Alvar. *Darwin and the general reader. The reception of Darwin's Theory of evolution in the British periodical press, 1859-1872*. Chicago: The University of Chicago Press; 1990.

Olby, Robert. *Origins of mendelism*. Chicago: The University of Chicago Press; 1985.

Turney, Jon. *Frankenstein's footsteps. Science, genetics and popular culture*. New Haven: Yale University Press; 1998.

Marouf Arif Hasian, Jr. *The rhetoric of eugenics in Anglo-American thought*. Georgia: The University of Georgia Press; 1996.

Bashford Alison, Levinell Philippa, Eds. *The Oxford handbook of the history of eugenics*. Oxford; New York:

Oxford University Press; 2010.

Software

In addition to web and Office tools, such as the campus online, email, Google docs, word, powerpoint and excel, tools such as wetransfer, dropbox or the VLC audiovisual file reader will be used.

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE