GUÍAS DOCENTES

Universidad de Jaén

FACULTY OF EXPERIMENTAL SCIENCES

Human, clinical, and forensic genetics

2024-2025

Grado en Biología

Acceso Mayores 40
Guías docentes UJA
Horarios de tutorías
Llamamientos PEvAU
Movilidad (Coordinador)
P.O.D.
Solicitud bilingüismo

Syllabus 2024-25 - 10213002 - Human, Clinical, and Forensic Genetics (Genética humana, clínica y forense)

Caption
- Level 1: Tutorial support sessions, materials and exams in this language
- Level 2: Tutorial support sessions, materials, exams and seminars in this language
- Level 3: Tutorial support sessions, materials, exams, seminars and regular lectures in this language

Back | Full version (Spanish) | English

DEGREE: Grado en Biología
FACULTY: FACULTY OF EXPERIMENTAL SCIENCES
ACADEMIC YEAR: 2024-25
COURSE: Human, Clinical, and Forensic Genetics

SYLLABUS

1. COURSE BASIC INFORMATION

NAME: Human, Clinical, and Forensic Genetics
CODE: 10213002 ACADEMIC YEAR: 2024-25
LANGUAGE: English LEVEL: 1
ECTS CREDITS: 6.0 YEAR: 4 SEMESTER: SC

2. LECTURER BASIC INFORMATION

NAME: MARCHAL ORTEGA, JUAN ALBERTO
DEPARTMENT: U103 - BIOLOGÍA EXPERIMENTAL
FIELD OF STUDY: 420 - GENÉTICA
OFFICE NO.: B3 - B3-304 E-MAIL: jamaor@ujaen.es P: 953213361
WEBSITE: jamaor@ujaen.es
ORCID: https://orcid.org/0000-0002-2008-610X
LANGUAGE: English LEVEL: 1

NAME: MARTÍN EXPÓSITO, MANUEL
DEPARTMENT: U103 - BIOLOGÍA EXPERIMENTAL
FIELD OF STUDY: 420 - GENÉTICA
OFFICE NO.: B3 - 017 E-MAIL: mexposit@ujaen.es P: 953212415
WEBSITE: -
ORCID: -
LANGUAGE: English LEVEL: 1

3. CONTENT DESCRIPTION

- Theory

I. Knowledge of the Human Genome

1. Human Genome Project

2. Structural Organization and Sequence of Human Genome

3. Functional Human Genomics

4. P opulation genetics and human evolution

II. Genetic diseases

5. Modes of inheritance of genetically based diseases

6. C hromosomal syndromes

7. Monogenic diseases

8. Complex genetic-based diseases

9 . G enetic analysis and genetic counselling

III. Forensic Genetics

10. Basic Methods of genetic identification

11. Applications in Foresensic science and paternity

- List of problems from all the lessons

- Practical Program:

1: Detection and analyses of genetic polimorfisms in the human genome

2: Application of methods of forensic genetics for human identification

These contents connect with the "Sustainable Development Goals" of United Nations (ODS, spanish), in particular with SDG (goals 3.1, 3.2, 3.3, 3.3, 3.4, 3.7 y 3.B). In addition, a critical spirit with be fosteres, which is essential for achieving SDG4

4. COURSE DESCRIPTION AND TEACHING METHODOLOGY

Whole group , 3 ECTS:

Lectures. In them, the teacher will explain the theoretical fundamentals of each topic and its importance in the thematic blocks. Students also will prepare applied seminars and develop work on issues related to the subject program, proposed by the teacher or by the student to get a better understanding of theoretical concepts. Debate will be encouraged by all students. The student will have access to the presentations of the issues along with other documents that will be of assistance and web page addresses Ilias platform.

Small gorups, 3 ECTS

Problems. 1 ECTS Applied exercises will be proposed that will need the assimilation of basic theoretical concepts regarding the themes. Students will present their solutions either individually or collectively and will discuss the related implications

Practical classes. Practical sessions about serveral laboratory experiments related to the concepts explained in the theory classes will be performed. A detailed protocol will be available on the web platform, which explains the basis of the practice, and indicate the process that students must follow on their own to get the proposed objective. Students should make notes, calculations and short answer questions in order to learn how to organize their ideas, results and conclusions aware of their experiments.

The student will have access to several teaching materials, which includes text and study guide, prepared by the teachers of the course and designed for individual study and self-assessment. Similarly all information will be updated on the web platform.

Students with special educational needs should contact the Student Attention Service (Servicio de Atención y Ayudas al Estudiante) in order to receive the appropriate academic support

5. ASSESSMENT METHODOLOGY

A system of continuous assessment based on the score obtained in different activities to get a better measure of skills acquired by students is proposed. To this end the following activities will be assessed:

1. Written examns of each of the blocks that make up the course syllabus. In these tests the acquisition of competences, skills and expertise of the course will be assessed.

2. Realization of exercises in the classes of problems. These exercises will be solved in class by the students themselves with the moderation of the discussions by the teacher. A written report which reflect the analysis developed for solving the problems will be also required.

3. Laboratory practices. The attitude of the student in the laboratory is taken into consideration during the labs, their interest in learning the techniques and skills with them. At the end a notebook containing a detailed analysis of the results will be required.
The specific skills of the course will be evaluated jointly by evaluating these three activities.

If the subject is not approved as a whole in the ordinary call II (May-June) note of activities 2 and 3 is saved only for the extraordinary call II (June-July).

6. BOOKLIST (Access the bibliography in the Library catalog)

MAIN BOOKLIST:

- Human molecular genetics Tom Strachan and Andrew Read. Edition: 4th ed.. Author: Strachan, T.. Publisher: Garland Science Taylor & Francis Group (Library)

- introduction to forensic genetics William Goodwin, Adrian Linacre, Sibte Hadi. Edition: -. Author: Goodwin, William.. Publisher: John Wiley & son (Library)

ADDITIONAL BOOKLIST:

- Human genetic diverstity: functional consequences for health and disease Julian C. Knight. Edition: -. Author: Knight, Julian C.. Publisher: Oxford University Press (Library)
- New clinical genetics Andrew Read and Dian Donnai. Edition: 1st publ. Author: Read, Andrew P.. Publisher: Scion Publishing, (Library)
- Human genetics : concepts and applications Ricki Lewis. Edition: 10th ed. Author: Lewis, Ricki. Publisher: McGraw-Hill, (Library)
- Forensic DNA typing: biology, technology, and genetics of str markers John M. Butler. Edition: 2nd ed.. Author: Butler, John M.. Publisher: Elsevier Academic Press (Library)

7. SUSTAINABLE DEVELOPMENT GOALS

Salud y bienestar

Educación de calidad

DETAILED INFORMATION

hrough this subject, students will acquire skills and
learning results that are linked to some of the goals included in
SDG 3 Health and Well-being and SDG 4 Education of Quality

8. VIRTUAL / CLASSROOM TEACHING SCENARIO

1) Teaching methodology and formative activities

Teaching activities	Format (in-peson/online)*	Description of teaching method
10 Laboratory sessions	In person sessions if the situation allows it.	Sessions of 2 hours in laboratory/informatic rooms.
30 Theory sessions	In person sessions if the situation allows it.	Sessions of 1 hour teaching rooms
5 Problem Sessions	In person sessions if the situation allows it.	Sessions of 2 hours in the classroom.

2) Evaluation system

Evaluation aspect	Format (in-person/online)	Description	Percentage
Theoretical concepts	In person sessions if the situation allows it.	In person: exam with short answers and/or multiple choices and/or long responses Online: resolution of theory-practicum cases	50%

Resolution of Problems	In person sessions if the situation allows it.	Attendance and elaboration of Problems dossier including critical analyses of the problems.	25%
Laboratory Practicum	In person sessions if the situation allows it.	Attendance and elaboration of a lab-notebook	25%

Consideration : final punctuation will be obtained after adding the qualifications of each evaluation aspect. If the subject is not passed as a whole at Ordinary II Call, the qualification of Practicum and Problems will be maintained at Extraordinary II Call.

3) Resources

The required resources and facilities for the proposed online teaching methods will be provided by âââââââââ□□¬Å¡¬Å¡¬Å¡¬Åâââââââ□□¬Å¡¬Å¡¬Åââââ□□¬Å¡¬Åâââ□□¬Åâ□□Docencia Virtualââââââââ□□¬Å¡¬Å¡¬Å¡¬ÂÂÂÂÂÂÂÂ□ and Informatic Services from the University of Jaén.

9. VIRTUAL TEACHING SCENARIO

1) Teaching methodology and formative activities

Teaching activities	Format (in-peson/online)*	Description of teaching method
10 Laboratory sessions	100% online.	Sessions in synchronous format combined with asynchronous activities will be applied, based on the Services of Virtual Teaching and Informatics from UJA.
30 Theory sessions	100% online.	Sessions in synchronous format by using the Services of Virtual Teaching and Informatics from UJA.
5 Problem Sessions	100% online.	Sessions in synchronous format combined with asynchronous activities will be applied, based on the Services of Virtual Teaching and Informatics from UJA.

2) Evaluation system

Evaluation aspect	Format (in-person/online)	Description	Percentage
Theoretical concepts	Online-synchronous (if in-person format is not available).	Resolution of theory-practicum cases	50%
Resolution of Problems	Online (asynchronous/synchronous)	Attendance and elaboration of Problems dossier including critical analyses of the problems.	25%

Laboratory Practicum	In-person and/or Online (asynchronous/synchronous)	Attendance and elaboration of a lab-notebook	25%

Consideration : final punctuation will be obtained after adding the qualifications of each evaluation aspect. If the subject is not passed as a whole at Ordinary II Call, the qualification of Practicum and Problems will be maintained at Extraordinary II Call.

3) Resources

The required resources and facilities for the proposed online teaching methods will be provided by âââââ□□¬Å¡¬Åâââ□□¬Åâ□□Docencia Virtualâââââ□□¬Å¡¬ÂÂÂÂ□ and Informatic Services from the University of Jaén.

DATA PROTECTION CLAUSE (on line exams)

Institution in charge of data processing: Universidad de Jaén, Campus Las Lagunillas, s/n, 23071 Jaén

Data Protection Delegate: dpo@ujaen.es

Purpose: In accordance with the Universities Law and other national and regional regulations in force, carrying out exams and assessment tests corresponding to the courses students are registered in. In order to avoid frauds while sitting the exam, the exam will be answered using a videoconference system, being able the academic staff of the University of Jaén to compare and contrast the image of the person who is answering the exam with the student's photographic files. Likewise, in order to provide the exam with evidential content for revisions or claims, in accordance with current regulation frameworks, the exam will be recorded and stored.

Legitimacy: compliance with legal obligations (Universities Law) and other national and regional regulations currently in force.

Addressees: service providers who are the owners of the platforms where the exams are carried out and with whom the University of Jaén has signed the corresponding data access contracts.

Storage periods: those established in current in force regulations. In the specific case of exam videoconference recordings, not before the examination records and transcripts are closed or the exam can still be reviewed or challenged.

Rights: you can exercise your right of access, amendment, cancellation, opposition, suppression, limitation and portability by sending a letter to the postal or electronic address indicated above. In the event that you consider that your rights have been violated, you may submit a complaint to the Andalusian Council for Transparency and Data Protection www.ctpdandalucia.es

CLASS RECORDING CLAUSE PERSONAL DATA PROTECTION

Person in charge: Universidad de Jaén, Paraje Las Lagunillas, s/n; Tel.953 212121; www.ujaen.es

Data protection delegate (DPO): TELEFÓNICA, S.A.U. ; Email: dpo@ujaen.es

Procedure aim: To manage proper recordings of teaching sessions with the aim of facilitating learning process under a multimodal and/or online teaching

Period for record storage: Images will be kept during legal term according to regulations in force

Legitimacy: Data will be managed according to legal regulations (Organic Law 6/2001, December 21, on Universities) and given consent provided by selecting corresponding box in legal admission documents

Data recipients (transfers or assignments): Any person allowed to get access to every teaching modality

Rights: You may exercise your rights of access, rectification, cancellation, portability, limitation of processing, deletion or, where appropriate, opposition. To exercise these rights, you must submit a written request to the Information, Registration and Electronic Administration Service of the University of Jaen at the address above, or by e-mail to the address above. You must specify which of these rights you are requesting to be satisfied and, at the same time, you must attach a photocopy of your ID card or equivalent identification document. In case you act through a representative, legal or voluntary, you must also provide a document that proves this representation and identification. Likewise, if you consider that

your right to personal data protection has been violated, you may file a complaint with the Andalusian Data Protection and Transparency Council www.ctpdandalucia.es