Diagnostic

Academic Year: (2025 / 2026) **Review date: 12/02/2025 17:20:31**

Department assigned to the subject: null

Coordinating teacher:

Type: Electives ECTS Credits : 6.0

Year : 4 Semester :

LEARNING OUTCOMES

K1: Evaluates the information obtained using a critical sense and establishes working hypotheses.
K2: It gathers knowledge in various aspects necessary for the development of professional activities.
K18: Identifies the physico-chemical basis and applications of the most commonly used instrumental techniques in a biotechnological experimentation laboratory applied to Biomedicine.
K25: Recognises the different clinical techniques for the detection of the main signs of diseases.
S1: It uses different techniques to find, manage and integrate available digital information.
S2: Prepares reports to effectively communicate project knowledge, objectives and results to specialised and non-specialised audiences.
S3: It handles the basic tools that allow the analysis of experimental and structural data in the different areas of biomedicine.
S5: Applies good laboratory practice for the proper design and performance of experiments, collection of results and drawing of conclusions, understanding the limitations of the experimental method.
S9: Applies biophysical techniques to the structural and functional analysis of biological molecules.
S11: Develops work skills and interpersonal relations in a work environment, using information and communication tools and techniques for data analysis and the elaboration of oral and written reports, public presentations and other training and professional activities.
S12: Appropriately uses the scientific and technical vocabulary of the different fields of biomedicine and the scientific method to analyse data and design experimental strategies.
C1: Participates in the activities of integrated scientific working groups
C2: Use the knowledge acquired for conflict resolution, learning, teamwork and negotiation processes.
C3: Accepts the role of the student as a professional learner fostering university civic co-existence
C4: Demuestra un comportamiento profesional adecuado, identificando los grandes principios bioéticos.

DESCRIPTION OF CONTENTS: PROGRAMME

1. Introduction to diagnosis. WHO recommendations. Applications: patient stratification, management, choice of treatment, prevention. Clinical and economic impact.
2. Diagnostic phases:
a. Preanalytical, type of samples, sample collection, biosafety precautions,...
b. Analytical, methodologies
c. Post-analytical, data collection, validation and interpretation, automation, diagnostic errors and consequences
3. Main areas of application:
a. Clinical microbiology (virology, parasitology, bacteriology, fungal infec.), identification and sensitivity to treatments.
b. Haematology
c. Clinical biochemistry, metabolism
d. Immunology
e. Serology/Hematology
f. Cyto-Histopathology
g. Molecular Biology (DNA, RNA, epigenetics)
h. Pathology
i. Reproductive biology
j. Oncology

k. Cardiology
4. Preventive medicine (biomarkers), detection of congenital diseases, risk factors, early detection in oncology, neurology, cardiology...
5. New technologies applied to diagnosis:
6. MALDI
1. AI
2. Biosensors
3. Smatphones
4. Microfluidics
7. Legislation

LEARNING ACTIVITIES AND METHODOLOGY

CLASSROOM LECTURES
FACE-TO-FACE CLASSES: REDUCED (WORKSHOPS, SEMINARS, CASE STUDIES)
STUDENT INDIVIDUAL WORK
LABORATORY SESSION
FINAL EXAM
SEMINARS AND LECTURES SUPPORTED BY COMPUTER AND AUDIOVISUAL AIDS.
PRACTICAL LEARNING BASED ON CASES AND PROBLEMS, AND EXERCISE RESOLUTION.
INDIVIDUAL AND GROUP OR COOPERATIVE WORK WITH THE OPTION OF ORAL OR WRITTEN PRESENTATION.
INDIVIDUAL AND GROUP TUTORIALS TO RESOLVE DOUBTS AND QUERIES ABOUT THE SUBJECT.
INTERNSHIPS AND DIRECTED LABORATORY ACTIVITIES.

ASSESSMENT SYSTEM

% end-of-term-examination/test:	60
% of continuous assessment (assigments, laboratory, practicals…):	40

FINAL EXAM. Max. 60%
CONTINUOUS EVALUATION. Min. 40%
FINAL EVALUATION OF INTERNSHIPS. 100%