Academic Year/course: 2023/24

29304 - Oral Microbiology

Syllabus Information

Academic year: 2023/24
Subject: 29304 - Oral Microbiology
Faculty / School: 229 - Facultad de Ciencias de la Salud y del Deporte
Degree: 442 - Degree in Odontology
ECTS: 6.0
Year: 1
Semester: Second semester
Subject type: Basic Education
Module:

1. General information

The objective of the subject is to train the dental student in the basic aspects of the microbial world and its importance for human and oral health. It will allow to know the main infectious agents that affect the mouth and/or adjacent tissues, as well as the diagnostic, therapeutic and preventive procedures necessary for the prevention of infection and/or recovery of health.

It is advisable to attend and participate in the programmed activities, to try to assimilate the knowledge progressively and to take advantage of the tutorials to raise doubts or problems related to learning.

2. Learning results

Upon completion of the subject, the student will be able to:

- Know the morphological, physiological and ecological characteristics of the main microorganisms of dental interest .
- Assess basic aspects of the ethology and pathogenesis of oral microbial diseases.
- Understand the interest of microbiological diagnosis, in terms of analysis request, sample collection, shipment and processing of samples and interpretation of results.
- Determine the most appropriate treatments based on the mechanisms of action and resistance of antimicrobials on pathogens.
- Guide the appropriate etiological treatment of the most important infectious diseases in

Dentistry.

- Know the prophylactic and control measures, personal and community, necessary to prevent or limit the spread of infectious diseases in dentistry.

3. Syllabus

Unit 1. Introduction to Microbiology.

Unit 2. Methodology of observation and morphological study of microorganisms.

Unit 3. Bacterial cell morphology.

Unit 4. Bacterial physiology.

Unit 5. Bacterial genetics.

Unit 6. Sterilization and disinfection.

Unit 7. Antimicrobials.

Unit 8. Host-parasite relationship.

Unit 9. General characteristics of the immune response.

Unit 10. Microbiological diagnosis.

Unit 11. Epidemiology and prophylaxis.

Unit 12. General characteristics of viruses.

Unit 13. General characteristics of fungi.

Unit 14. General characteristics of parasites.

Unit 15. Laboratory diagnosis of infectious diseases.

Unit 16. Genus *Staphylococcus.*

Unit 17. Genus *Streptococcus.*

Unit 18. Strict anaerobic bacteria I.

Unit 19. Strict anaerobic bacteria II.

Unit 20. Gram-positive facultative anaerobic gram-positive bacilli.

Unit 21. Facultative anaerobic gram-negative bacilli.

Unit 22. Acid-fast bacteria.

Unit 23. Spirochetes.

Unit 24. *Candida* genus and other fungi of dental interest.

Unit 25. Human parasitosis.

Unit 26. RNA viruses.

Unit 27. DNA viruses.

Unit 28. Hepatitis virus.

Unit 29. Human Immunodeficiency Virus (HIV)

Unit 30. Composition and ecology of the oral microbial flora.

Unit 31. Microbiology of dental plaque.

Unit 32. Microbiology of caries.

Unit 33. Periodontal and peri-implant microbiology.

Unit 34. Systemic repercussions of oral infections.

4. Academic activities

The learning process designed for this subject is based on:

Participative lectures, laboratory practices, case resolution.

The program offered to the student to help them achieve the expected results comprises the following activities...

THEORETICAL PROGRAM

Theoretical classes will take place in a classroom planned for this purpose, and the content will be distributed in the following blocks:

- Introduction to Oral Microbiology. General information on microorganisms
- Etiological agents of oropharyngeal infections
- Dental microbiology

PRACTICAL PROGRAM

Practical laboratory classes. They will take place in the Microbiology Laboratory in 4 groups. This practice will consist of:

- Microscopic observation of microorganisms. Gram stain.
- Handling of microorganisms in the laboratory.
- Culture of microorganisms and obtaining pure cultures.
- Clinical sampling, seeding and isolation of microorganisms.
- Biochemical identification tests
- Antibiogram by agar diffusion.

The students, individually, will make a practice notebook or portfolio where the most important aspects of the practices carried out in the laboratory will be included.

PROBLEMS AND CASES

They will take place in the assigned classroom. The students, working in groups or individually, will solve questions/clinical cases related to the syllabus of the subject.

5. Assessment system

The student must demonstrate that they have achieved the intended learning results by means of the following assessment activities

1. Theoretical concepts. The theoretical knowledge of the subject will be evaluated on a continuous basis with two midterm exams. Each midterm is equivalent to 35% of the final grade, the exams will be multiple-choice tests, with 5 options of answer of which only one is correct and errors do not count against the final grade. Each exam will be passed with 70% of correct questions.

In this way, when the 2 midterm evaluations are added together, the theoretical evaluation has a value of 70% of the final grade.

Students who have not attended the practices and/or seminars or who wish to improve the grade obtained in the evaluation of points 2, 3 and 4 may sit for each midterm and, in case of failing, will be able to take the make-up exam.

2. **Portfolio**. It will be evaluated through the completion of a paper on the practices carried out. The following will be analysed: structure of the work, content and quality of the documentation, originality and presentation (20% of the final grade).

3. **Seminars and case studies:** The students, working in groups or individually, will present a clinical case in relation to the microorganisms or systemic repercussions of oral infections reviewed in the syllabus of the subject. (5% of the final grade).

4. **Attendance and participation** in the programmed theoretical and practical teaching-learning activities. Attendance and participation as assessed by the teacher's record will be taken into account (5% of the final grade).