

1. BASIC INFORMATION

Course	Documentation and Introduction to the Methodology of Research in Dentistry
Degree	Degree in Dentistry
School/Faculty	Faculty of Health Sciences
Year	First Year
ECTS	3 ECTS (75 h)
Credit Type	Mandatory
Language/s	English
Delivery Mode	Face-to-Face
Semester	First semester
Academic year	2020-2021
Coordinating Professor	Daniel López Malo

2. PRESENTATION

Dentistry, as a profession within the Biomedical Sciences, requires the training of individuals not only with specific knowledge related to the performance of their work, but also towards scientific research. The subject "Documentation and Introduction to the Methodology of Research in Dentistry" initiates the future dentist in the knowledge of the resources that allows them to actively participate in research projects. Therefore, the future professional will be able to share with the scientific community its results, as well as to improve and to keep up with the latest techniques and research results applicable to its future activity, relying on reliable and evidence-based sources of information.

This subject introduces the student in the scientific method and in the search for information. Students will be provided with theoretical and methodological knowledge that allows them to reflect on the reality of their practice, gain scientific knowledge and apply it in order to improve their professional performance.

Emphasis will be placed on the student's achievement of the fundamental skills needed to search for, analyze and use research evidence in practice. Therefore, students will develop skills for critical reading of literature, with the aim of asking relevant research questions.

3. SKILLS AND LEARNING RESULTS

Basic competencies:

- BC2: That students know how to apply their knowledge to their work or vocation in a professional way and possess the skills that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study.
- BC3: That students can gather and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant topics of a social, scientific or ethical nature.
- BC4: That students can transmit information, ideas, problems and solutions to both a specialized and non-specialized audience.
- BC5: That students have developed the learning skills necessary to undertake subsequent studies with a high degree of autonomy.

Cross competencies:

- CC1: Responsibility. That the student can assume the consequences of the actions he performs and respond to their own actions.
- CC4: Communicative skills. That the student can express concepts and ideas effectively, including the ability to communicate in writing with conciseness and clarity, as well as speak in public effectively.
- CC5: Interpersonal understanding. That the student can make an active listening in order to reach agreements using an assertive communication style.
- CC7: Teamwork. That the student can participate actively in achieving a common goal, listening, respecting and creating the ideas and proposals of the rest of his team members.
- CC9: Planning. That the student can effectively determine their goals and priorities by defining the actions, deadlines, and optimal resources required to achieve such goals.

General competencies:

- GC1: Know the essential elements of the dentist profession, including ethical principles and legal responsibilities.
- GC3: Ability to identify patient concerns and expectations, as well as communicate effectively and clearly, both orally and in writing, with patients, family members, the media and other professionals
- GC8: Ability to know how to share information with other healthcare professionals and work as a team.
- GC9: Ability to understand the importance of maintaining and using records with patient information for further analysis, preserving data confidentiality.
- GC18: Knowledge to critically assess and know how to use sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information
- GC19: Knowledge of the scientific method and have critical ability to assess established knowledge and novel information. Being able to formulate hypotheses, collect and critically assess problem-solving information, following the scientific method.

Specific competencies:

- SC3: Know the scientific method and have critical ability to assess established knowledge and novel information.

Learning results:

- LR1: Develop an interest in research in health sciences and create a habit in the management of scientific publications and the critical sense necessary for the understanding and evaluation of published epidemiological studies.
- LR2: Develop research skills, both primary and secondary. Generate bibliographic review skills and referencing habits (Vancouver style).
- LR3: Know different ethical aspects related to scientific publication.

The table below shows the relationship between the competencies that are developed in the subject and the learning results pursued:

Competencies	Results of learning
BC2, BC3, BC4, CC1, CC4, CC5, CC7, CC9, GC3, GC8, GC18, GC19	LR1
BC2, BC3, BC4, CC1, CC4, CC5, CC7, CC9, GC3, GC8, GC18, GC19	LR2
BC3, CC1, GC1, GC9	LR3

4. Content

Introduction. General considerations. Research. The scientific method.

Learning Unit 1: Scientific Documentation.

- 1. Appropriate sources of information.**
Age of Information. Primary and secondary sources. Academic and informative publications. Search for information on the Internet.
- 2. Databases related to Health Sciences.**
Scientific journals. Impact factor. *h* Index. Web of Science. PubMed.
- 3. Academic honesty.**
Integrity in the investigation. Scientific fraud. Principles of honesty. Quotes and references.

Learning Unit 2: The scientific method.

- 4. Scientific research**
The concept of research. Research question. Study design. Types of studies.
- 5. The Scientific Method.**
General considerations. Stages of the research. Formulation of a question. Data collection. Hypothesis checking. Obtaining conclusions. Serendipity.

Learning Unit 3: Scientific publications.

6. Types of scientific publications.

Scientific literature. Scientific articles. Review of literature. Examples.

7. The scientific article.

General considerations. Introduction. Methodology. Results and discussion. Conclusions. Title and *abstract*. Other sections. The publishing process.

8. Bioethics.

Ethical aspects related to scientific publication and research. Informed consent. Bioethical aspects of research.

5. TEACHING-LEARNING METHODOLOGIES

The following are the types of teaching-learning methodologies to be applied:

- Masterclass
- Case Study Method
- Cooperative Learning
- Problem-Based Learning (PBL)
- Project-Based Learning

6. LEARNING ACTIVITIES

The following are the types of learning activities to be performed and the time of student dedication to each of them:

Face-to-face mode:

Learning activity	Number of hours
Critical analysis of scientific articles	7 h
Problem solving	8 h
Master Classes	42 h
Case analysis	8 h
Research	10 h
Total	75 h

7. Evaluation

The evaluation systems are related to their weight on the total mark of the subject:

Evaluation system	Weight
Knowledge test	50%
Cases/problems	25%
Practical exercises	25%

On the Virtual Campus, when you access the subject, you will be able to consult in detail the evaluation activities that you must carry out, as well as the delivery dates and evaluation procedures of each of them.

- **Knowledge test:** 30 60 test questions, of which the correct ones will be worth 1 point, the wrong ones will subtract 0.33 points and the unanswered questions will not count. The student's reasoning ability will be evaluated.

7.1. Ordinary call

To pass the subject in ordinary call you must obtain a grade greater than or equal to 5.0 out of 10.0 in the final grade (weighted average) of the subject.

In any case, you will need to get a score greater than or equal to 5.0 in the final test, so that it can average with the rest of the activities.

In order to take the evaluative test in ordinary call, students must attend a minimum of 50% of the theoretical classes. Otherwise, they must go to the extraordinary call.

Activities will be delivered using the virtual platform before the deadline. Any work or activity delivered later than that date and/or that does not meet the required characteristics (in general, other than a .pdf, .doc, .docx, .ppt or .pptx file) may be graded with 0 points.

The student who has performed less than 30% of the activities or tests required for the assessment of the subject will be considered "student not presented" in the corresponding call. If the student has performed a minimum of 30% of the activities, in that case they will have a numerical mark in the call.

The mention of "Enrollment of Honor" will be given to students who have earned a grade equal to or greater than 9.0. Its number may not exceed 5% of the students enrolled in each subject in the corresponding academic year, unless the number of students enrolled is less than 20, in which case a single Honor Degree may be granted.

7.2. Extraordinary Call

To pass the subject in extraordinary call the student must obtain a grade greater than or equal to 5.0 out of 10.0 in the final grade (weighted average) of the subject.

In any case, you will need to get a score greater than or equal to 5.0 in the final test, so that it can average with the other activities.

Activities not approved or delivered in an ordinary call must be delivered and approved in the extraordinary call.

8. TIMELINE

This section indicates the schedule with delivery dates of evaluable activities of the subject:

Evaluable activities	Date
Cases/Problems: Task 1: LOOKING FOR INFORMATION	Week 2
Cases/Problems: Task 2: ACADEMIC HONESTY	Week 4
Cases/Problems: Task 3: ESSAY	Week 6
Cases/Problems: Task 4: PICO QUESTIONS	Week 8
Cases/Problems: Task 5: LITERATURE SEARCH	Week 9
Cases/Problems: Task 6: ARTICLE	Week 10
Cases/Problems: Task 7: REVIEW	Week 14
Practical Exercises	Throughout the course
Evaluation test	January, ordinary call

This timeline may be modified for logistical reasons of the activities. Any modification will be notified to the student in a timely manner.

9. Bibliography

Indispensable recommended **bibliography**:

- LAKATOS, I. (2006). **The methodology of scientific research** programs. Madrid: Alliance.
- LAAKE, P. (2015). **Research in Medical and Biological Sciences: From Planning and Preparation to Grant Application and Publication**. Amsterdam; Boston: Elsevier/Academic Press.
- MARCZYK, G.R. (2005). **Essentials of Research Design and Methodology**. Hoboken, N.J: John Wiley & Sons.
- GREENHALGH, T. (2019). **How to read a paper: the basics of evidence-based medicine and healthcare**. Hoboken, NJ: John Wilen & Sons Ltd. 6th edition.
- D. De Vaus (2012). **Research design in social research**. London: SAGE. 2nd edition.

Complementary recommended **bibliography**:

- PEARS, R. (2019). **Cite Them Right: The Essential Referencing Guide**. New York: Palgrave Macmillan. 11th Edition.

10. DIVERSITY CARE UNIT

Students with specific educational support needs:

Curriculum accommodations or adjustments for students with specific educational support needs, in order to ensure equity of opportunities, will be guided by the Diversity Care Unit (DCU).

It will be essential to issue a report of adaptations/curricular adjustments by this Unit, so students with specific educational support needs should contact through:

unidad.diversidad@universidadeuropea.es at the beginning of each semester.

11. SATISFACTION SURVEYS

Your opinion matters!

The European University encourages you to participate in satisfaction surveys to identify strengths and areas of improvement over teachers, qualifications and the teaching-learning process.

Surveys will be available in the survey space of your virtual campus or through your email.

Your assessment is necessary to improve the quality of the degree.

Thank you very much for your participation.