UNIVERSIDAD AUTÓNOMA DE MADRID

33202 - COMMUNICATION AND SCIENTIFIC DOCUMENTATION/DATA ANALYSIS

Syllabus Information

Code - Course title: 33202 - COMMUNICATION AND SCIENTIFIC DOCUMENTATION/DATA ANALYSIS

Degree: 721 - Máster en Investigación Farmacológica (2018)

Faculty: 106 - Facultad de Medicina

Academic year: 2019/20

1.Course details

1.1.Content area

Teaching is focused on developing abilities and practice in bibliographic searches, reference management, critical evaluation of library resources and to apply this knowledge in the development of scientific work. In addition, the statistical method is introduced as a scientific method for research in health sciences.

1.2.Course nature

Compulsory

1.3.Course level

Máster (MECES 3)

1.4.Year of study

1

1.5.Semester

First semester

1.6.ECTS Credit allotment

3.0

1.7.Language of instruction

English

1.8.Prerequisites

General requirements of the master.

1.9.Recommendations

Bringing a computer may be required for some classes.

1.10.Minimum attendance requirement

Minimum attendance 80% (theoretical and seminars/resolution of problems)

1.11.Faculty data

Lecturer(s) MANUELA GARCÍA LÓPEZ **(COORDINATOR)**
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Contact hours: Previous e-mail appointment is required

1.12.Competences and learning outcomes

1.12.1.Competences

BASIC AND GENERAL
GE1 - Acquire the knowledge, skills and abilities necessary to carry out an innovative quality research in Pharmacology

CB6 - Possess and understand knowledge that provides a basis or opportunity to be original in the development and / or application of ideas, often in a research context

CB9 - That the students know how to communicate their conclusions and their knowledge to specialized and non-specialized publics in a clear and unambiguous way

CB10 - That students possess the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous.

TRANSVERSAL
T2 - Ability to carry out effective scientific and technical communication, both in a specialized environment and in more general environments, including the educational.

T1 - Ability to carry out a self-learning plan, perform an autonomous consultation of the bibliography and databases at the scientific, technical or regulatory level.

SPECIFIC
ES-2 - Know the potential of new biological, genetic and cellular therapies

ES-3 - Know the basic aspects about the design and obtaining new drugs, both at a chemical and biotechnological level, as well as the scientific, ethical and regulatory aspects that condition it.

ES-8 - Be able to carry out the handling and analysis of data from pharmacological investigations

1.12.2.Learning outcomes

The student will handle basic methodological tools transversal in scientific research, such as scientific documentation or biostatistics.

1.12.3.Course objectives

COMMUNICATION AND SCIENTIFIC DOCUMENTATION

The subject aims to show the importance of the sources of scientific documentation. It is focused to develop practical skills in bibliographic searches, reference management, critical evaluation of bibliographic resources and to be able to apply this knowledge finally in the elaboration of the scientific works.

DATA ANALYSIS

- To know the principles of the scientific method and biomedical research
- To know the main statistical procedures of application in the health sciences
- Design and conduct simple research studies using statistical methodology.
- To know how to use some software of statistical analysis.
- Interpret correctly the statistical results of the scientific medical literature.

1.13.Course contents

COMMUNICATION AND SCIENTIFIC DOCUMENTATION

1. How to write a scientific paper
2. PubMed I
3. PubMed II
4. Research resources: JCR, SCOPUS, ORCID, ResearchGate
5. Reference managers: Refworks, Endnote
6. SciFinder
7. SciFinder-PubChem
8. Electronic records in clinical practice

DATA ANALYSIS

1. Statistics and probability: from sample to population (1h)
2. Confidence intervals (1h)
3. Continuous variables (2h)
4. P-values and statistical significance (2h)
5. Statistical assumptions (1h)
6. Statistical tests (3h)
7. Fitting models (3h)
8. Sample size (2h)
9. Experimental design (1h)

Practices included: Prism, etc

1.14.Course bibliography

COMMUNICATION AND SCIENTIFIC DOCUMENTATION

- Bibliography of each of the contents will be provided through Moodle

DATA ANALYSIS

- Book: H. Motulsky. Intuitive Biostatistics: A Nonmathematical Guide to Statistical Thinking, 3rd edition. Oxford University Press (2013
- Alvarez Cáceres, R.Estadística aplicada a las Ciencias de la Salud. Ediciones Diaz de Santos.2007.
- Carrasco, JL, López MR, Casanova,JF, Garcia JJ, Pueyo A,Hortelano M. Ejercicios y problemas de Estadística Médica. Ed. Ciencia 3. 1994.
- Martín Andrés A, Luna del Castillo JD. Bioestadística para las ciencias de la salud. Norma. 2004.
- Milton JS. Estadística para Biología y Ciencias de la salud (edición revisada, actualizada y ampliada). McGraw-Hill Interamericana. 2012.
- Pardo A, Ruiz MA. Análisis de datos con SPSS. Mc Graw-Hill Madrid.2005.

2.Teaching-and-learning methodologies and student workload

2.1.Contact hours

TOTAL HOURS OF COMMUNICATION AND SCIENTIFIC DOCUMENTATION/DATA ANALYSIS		
hours	Nº of	%
Theoretical classes	24	50%
Practical classes	10	
Tutor hours	2	
Examination	2	
Study hours	32	50 %
Preparation of exam	5	
Total hours: 25 h x 3 ECTS	**75**	

2.2.List of training activities

LECTURES
Lectures will provide organized and structured information elaborated by the Lecturer. The lecture content will include the knowledge already established or in very advanced situation, obtained from textbooks, bibliographic reviews, and relevant original papers. Lectures will take 50 minutes, using audiovisual presentations that can be available in the teaching web page.

RESOLUTION OF PROBLEMS/BIBLIOGRAPHIC SEARCHES
These tasks will be complementary to the information to Lectures, including practical exercises and problems to stimulate active student participation, under the supervision of a lecturer.

3.Evaluation procedures and weight of components in the final grade

3.1.Regular assessment

The final mark (for both ordinary and extraordinary evaluations) will be the result of the marks obtained in the final exam, attendance and continuous evaluation (this includes participation, attitude and resolution of problems).

IMPORTANT: To pass the subject it is compulsory to attend 80 % of the scheduled activities and to have a minimum score of 5/10 points in the final exam. If the student does not pass the exam in the ordinary call, he/she will need to attend the extraordinary exam.

3.1.1.List of evaluation activities

80%: Final exam that will consist of:
- Bibliographic searches
- Solution of Problems
- Multiple choice questions

** it is necessary to bring the computer for the exam*

20%: Attendance and continuos evaluation

3.2.Resit

The same requirements as for the Regular assessment apply in this case.

3.2.1.List of evaluation activities

The same list of evaluation activities as for the regular assessment apply in this case.

4.Proposed workplan

Schedule will be uploaded in Moodle:https://moodle.uam.es/

Week	Contents	Contact hours	Independent study time
1	Theoretical classes	9	12
2	Practical classes	9	12
3	Tutor hours	9	15
4	Exam	2	7