

1. language

English

2. course contents

Coordinator: Prof. BOCCIA STEFANIA

Year Course: 3

Semester 3

UFC: 1

Modules and lecturers:

- METHODOLOGY OF RESEARCH II (ML3294)

3. bibliography

Students can consult one of these texts:

- Fletcher RH, Fletcher SW, Fletcher GS. Clinical Epidemiology: The Essentials. LWW; 2012.
- Rothman KJ. Epidemiology: An Introduction. Oxford University Press; 2012.

Moreover, the teacher will provide materials and references directly during the lectures through and the learning platform.

4. learning objectives

Knowledge and understanding (Dublino 1)

At the end of the course, the student has to demonstrate to know the terminology and principal definitions, to know ways of measuring health phenomena, to understand the principle in building up a study (study design) and to generate a testing hypothesis, understand and recognize the main causes of bias.

Applying knowledge and understanding (Dublino 2)

At the end of the course, the student has to demonstrate to being able to draft a research protocol for different design studies (observational and experimental ones); calculate sample size, understanding how bias can be avoided while performing a study or chose the proper study design to avoid it; be able to design a randomised controlled clinical trial.

Making judgements (Dublino 3)

At the end of the course, the student has to demonstrate to be confident with the main principle that regulate the design of scientific studies, recognize when bias are present or might emerge from studies, judge how health phenomena in a specific population can be described and critically analyze them.

Communication skills (Dublino 4)

At the end of the course, the student has to demonstrate to be able to communicate and properly build up

Learning skills (Dublino 5)

The student, based on the elements acquired, has to be able to expand their knowledge

and update themselves by drawing on independently to texts and scientific articles.

5. PREREQUISITES

Knowledge of Methodology of Research I

6. teaching methods

Knowledge and understanding (Dublino 1)

During the lectures, the teachers will illustrate the main topics of the Methodology of research foreseen in the course, also gaining a deeper insight from the previous course of Methodology of Research I. The student is pushed to develop and improve their own skills regarding the drafting of research protocols, gaining knowledge on causation, bias, sample size and designing experimental studies.

Applying knowledge and understanding (Dublino 2)

During the lessons, students are invited to an active participation, stimulating their analytical abilities; to apply, design and criticize types of studies; and soliciting questions and discussion.

Making judgements (Dublino 3)

During the lessons, students are encouraged to analyse/interpret the different scientific problems and to solve them while using a proper methodology.

Communication skills (Dublino 4)

Students are invited to ask questions and give answers both during lessons. If the language does not appear correct from the point of view of the terminology, the teacher explains the correct way to express the concept in order to develop in the student an appropriate technical / scientific language.

Learning skills (Dublino 5)

The lessons are explanatory of the main topics requested to be learnt. However, students are encouraged to deepen these contents using textbooks, e-learning, or other subsidies and invited to propose doubts and / or questions at the end of the lesson or requesting a personal appointment with the teachers.

7. other informations

Teachers are available for individual interviews with the students, to be scheduled outside of class hours, aimed at clarifying problematic aspects related to the study of the theoretical program or of the exercises.

8. methods for verifying learning and for evaluation

The final written exam will take place at the end of the course during the Ordinary session. The vote will be expressed in thirtieths. The student will pass the exam if he/she gets at least 18. The maximum score will be awarded if all the test items will be correct. Students will be challenged with test items that address issues that require:

- a) the knowledge of how to measure health phenomena (Dublin 1);
- b) the understanding of study design principles and applications (Dublin 2);
- c) the comprehension of the aim and of the requisites for testing hypothesis in health and applying multivariable analysis to the study of health outcomes (Dublin 3 and 5);
- d) the use of a correct terminology (Dublin 4).

9. program

The course will follow-up the course of Methodology of Research I, by providing the essential knowledge on the following topics:

- Drafting a research protocol for observational and experimental studies;

- Causation and causal inference;
- Calculating the sample size of an association study;
- Design a randomized controlled clinical trial;
- Health Information System
- Systematic reviews and meta-analysis of the literature.