

# METHODOLOGY OF SCIENTIFIC RESEARCH

MODULE	CONTENT	YEAR	TERM	CREDITS	TYPE
Optative	Methodology of Scientific Research	2nd, 3rd	2nd	6	Optative
<b>LECTURER(S)</b>			<b>Postal address, telephone n<sup>o</sup>, e-mail address</b>		
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<b>DEGREE WITHIN WHICH THE SUBJECT IS TAUGHT</b>					
Degree in human nutrition and dietetics					
<b>PREREQUISITES and/or RECOMMENDATIONS (if necessary)</b>					
Having approved at least the first year of the degree to have a basic understanding of what is a science.					
<b>BRIEF ACCOUNT OF THE SUBJECT PROGRAMME (ACCORDING TO THE DEGREE ¿??)</b>					
Concept and history of Science. The scientific method and its application to HND. Reports and research papers. Dissemination and disclosure of them. Development and scientific innovation. Social of the scientific responsibility.					
<b>GENERAL AND PARTICULAR ABILITIES</b>					
CE1.-To acquire training of the scientific method and of the investigative activity, specially in the area of the HND. CE2.-To acquire formation to design a report and a work of scientific research. CE3.- To acquire skills to realize searches of information, to realize samplings and to select methodological procedures for the elaboration of reports and works of scientific research, specially in the area of the HND. CE4.- To acquire formation in the skills of interpretation of results for the elaboration of reports and works of research focused on the HND. CE5.- To acquire formation for the draft of reports and works of research including design of tables, figures and graphs, as form of communication with the persons, professionals, institutions and diverse entities as					



well as with mass media.

CE6.- To know critically the international means of diffusion of the scientific knowledge, specially in the area of the HND.

CE7.-To learn to comment and do a critical analysis of reports and scientific works.

CE8.-To acquire skills in the oral exhibition and in the debate, of reports and scientific researches.

CE9.-Development of the science. To know the means of economic exploitation of the science.

CE10.-History and social responsibility of the science, specially applied to the HND.

CE11.-To know basically the administrative structure and the possibilities of the professional investigative career, with orientation to the HND.

#### OBJECTIVES (EXPRESSED IN TERMS OF EXPECTED RESULTS OF THE TEACHING PROGRAMME)

- To provide the fundamental concepts to begin in the research in HND following the scientific method.
- Search of sources of information. Interpretation, elaboration and draft of reports and works of research.
- Knowledge of an ideal way of diffusion and publication of reports and works of research.
- To know the development and the scientific innovation as well as its economic aspects.

#### DETAILED SUBJECT SYLLABUS

##### **Lesson 1.- Concept of Science**

##### **Lesson 2.- Development of the Science across the time**

##### **Lesson 3.- The scientific method**

##### **Lesson 4.- Introduction to the research in Human and Dietetic Nutrition**

##### **Lesson 5.- The observation as source of the Science**

##### **Lesson 6.- Reports and scientific papers**

##### **Lesson 7.- Diffusion and international visibility of reports and scientific papers**

##### **Lesson 8.- Research, Development and Scientific Innovation**

##### **Lesson 9.- Social responsibility of the scientist**

##### **Lesson 10.- Studies of postdegree and centers of research**

#### CLASSES PRACTICES / SEMINARS

- 1.-Design of a report and a paper of scientific research
- 2.-Previous search of sources of information.
- 3.-Sampling and selection of methodological procedures.
- 4.-Skills of interpretation of results.
- 5.-Writing of the different parts of a report and scientific paper: Summary, Introduction, Material and Methods, Results and Discussion, Conclusions and References.



- 6.-Design of tables, figures and graphs.  
7.-Comment and critique of reports and scientific papers.  
8.-Accomplishment of a poster.

#### EXHIBITION OF WORK

#### **READING**

- Bernabeu, J., Wanden-Berghe, C., Sanz, J., Castiel, L.D., Iñesta, M., Anderson, H. (1997). Investigación e Innovación Tecnológica en la Ciencia de la Nutrición. Editorial Club Universitario, Alicante.
- Bunge, M. (2004). La investigación científica: su estrategia y su filosofía. Siglo XXI, Mexico.
- Castelló, M (coord.), Miras, M., Solé, I., Teberosky, A. Iñesta, A. Y Zanotto, M. (2007). Escribir y comunicarse en contextos científicos y académicos: conocimientos y estrategias. Editorial Grao, Barcelona.
- Cegarra, J. (2004). Metodología de la investigación científica y tecnológica. Ediciones Díaz de Santos, Madrid.
- Gauch, H.G. (2003). Scientific method in practice. Cambridge University Press, UK.
- Gómez, M.M. (2006). Introducción a la metodología de la investigación científica. Editorial Brujas, Buenos aires.
- Insight Media. (2010). How to Read and Understand a Research Study; Research Design: The Experiment; Research Design: The Survey; Research Ethics. DVDs of Science. Insight Media, New York, US.
- Miján de la Torre, A. (ed.) (2002). Técnicas y Métodos de Investigación en Nutrición Humana. Editorial Glosa, Barcelona.
- National Academy of Sciences (U.S.). Committee on the Conduct of Science, National Academy of Engineering (1995). On being a scientist: responsible conduct in research. National Academies Press, Washington DC.
- Ordóñez, J., Sánchez Ron, J.M., Navarro Brotóns, V. (2007) Historia de la Ciencia. Espasa-calpe, Madrid.
- Ortiz, F.G. (2003). Diccionario de metodología de la investigación científica. Editorial Limusa, Mexico.
- Rozakis, L. (1999). Schaum's quick guide to writing great research papers. McGraw-Hill Professional, New York.
- Tamayo, M. (2005). Metodología formal de la investigación científica. Editorial Limusa, Mexico.
- Wilson, E.B. (1991). An introduction to scientific research. McGraw-Hill, New York.

#### **RECOMMENDED INTERNET LINKS**

- Scientific Method: <http://emotionalcompetency.com/sci/booktoc.html>
- Science Fair Project Ideas: <http://www.sciencebuddies.org/>



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[http://www.sciencebuddies.org/science-fair-projects/project\\_scientific\\_method.shtml](http://www.sciencebuddies.org/science-fair-projects/project_scientific_method.shtml)

-An Introduction to Science: Scientific Thinking and the Scientific Method: <http://www.freeinquiry.com/intro-to-sci.html>

-Introduction to the Scientific Method: [http://teacher.nsrj.rochester.edu/phy\\_labs/AppendixE/AppendixE.html](http://teacher.nsrj.rochester.edu/phy_labs/AppendixE/AppendixE.html)

-The Scientific Method: A helpful guide by Science Made Simple:  
[http://www.sciencemadesimple.com/scientific\\_method.html](http://www.sciencemadesimple.com/scientific_method.html)

