Subject Guide (∞)

FOOD ANALYSIS

(module

(Fecha de aprobación en Consejo de Departamento:05/06/2019)

MODULE MATTER YEAR SEMESTER CREDITS TYPE
Food Science Food analysis and Food science 2º 2º 6 Mandatory

LECTURERS

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DEGREE WITHIN WHICH THE SUBJECT IS TAUGHT

Science and Food Technology

PREREQUISITES and/or RECOMMENDATIONS (if necessary)

In particular this course requires previously successful completion of all the materials previously for the Common Basic Training module, and the subjects: Chemical Analysis, Commodity Production, Food Chemistry and Biochemistry and Food Science I and II.

BRIEF ACCOUNT OF THE SUBJECT PROGRAMME (ACCORDING TO THE DEGREE)

- The food analysis: purposes, procedures. Types of analysis. Quality of analytical results.
- Methodologies for quantification of the different nutrients of a food product, to evaluate other quality specifications and food quality control, detection of tampering, adulteration and fraud.
- Sensory analysis of foods.

GENERAL AND PARTICULAR ABILITIES

General Competences
- The Basic Skills of University contained in the Agreement of the Andalusian Committee of the Degree in Science and Food Technology

**Transversal Competences**
- Ability to use ICTs with ease

**Specific Competences**
- Ability to correct handling of samples during sampling and preparation for analysis of different types of food.
- To develop common and the most frequently analytical protocols used to detect alterations in food, adulteration and fraud.
- To acquire fluency in the use of official methods of analysis used in food.
- To understand the foundations and objectives of the sensory analysis.
- To understand its importance as a parameter of quality food and drinks.
- To analyze your interest in research, development and innovation of new foods.
- To study the standard conditions for the training of the panel and to perform the tests.
- To learn the most commonly used sensory testing.
- To initiate students on tests of sensory analysis.
- Ability to participate in sensory analysis tests.
- Use knowledge gained about the chemical composition and properties of food, food analysis, detection of fraud and its alterations, processing, preservation and evaluation of the quality of food.
- Conduct Chemical analyzes, interpret results and write reports, take responsibility for issuing opinions related to the overall quality of the food samples.

**OBJECTIVES (EXPRESSED IN TERMS OF EXPECTED RESULTS OF THE TEACHING PROGRAMME)**
- The knowledge needed to analyze food, raw materials, ingredients, additives, etc., assess results and, where appropriate, propose actions for improvement.

**DETAILED SUBJECT SYLLABUS**

**THEORY**
of interest. Applications.

- 9. - Determination of Vitamins. Extraction and separation. Most common methods used in their determination.
- 12. - Quality control of edible oils and fats. Standards and analytical methods.
- 17. - Sensory attributes. Appearance or aspect. Importance of color. Odor and flavor: properties and sensory evaluation

**PRACTICES**

**Seminars / Workshops**
- Design of Standard Operating Procedures
- Use of Reference Materials
- Reporting

**Laboratory Practices**
Practice 1. - Performing preference sensory analysis: paired comparison test. Discriminative tests: duo-trio test and triangular test
Practice 2. Organoleptic assessment of virgin olive oil: different sensory attributes and profile sheets
Practice 3. - Wine tasting: sensory attributes and profile sheet
Practice 4. - Determination of essential elements and pollutants by atomic absorption spectroscopy
Practice 5. - Detection and determination of food additives
Practice 6. - Determination of caffeine and quinine in soft drinks

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Practice 7. - Determination of reducing sugars and acidity in honey

BIBLIOGRAPHY

BASIC BIBLIOGRAPHY


SUPPLEMENTARY BIBLIOGRAPHY

- Ducauze, Ch. J. 2006 Fraudes alimentarios. indicaciones reglamentarias y metodología analítica. Ed. Acribia, S.A. Zaragoza, España

RECOMMENDED INTERNET LINKS

Organizations
- Agencia Española de Consumo, Seguridad Alimentaria y Nutrición – AECOSAN  
  [http://www.aecosan.msssi.gob.es/AECOSAN/web/home/aecosan_inicio.htm](http://www.aecosan.msssi.gob.es/AECOSAN/web/home/aecosan_inicio.htm)
- Association of Official Analytical Chemists – AOAC  
- Codex Alimentarius  
- European Food Safety Authority – EFSA  
  [https://www.efsa.europa.eu/](https://www.efsa.europa.eu/)
- European Food International Council – EUFIC  
- European Federation for Biotechnology – EFB  
- Institute of Food Science & Technology – IFST  
  [https://www.ifst.org/](https://www.ifst.org/)
- International Life Sciences Institute - ILSI  
- International Organization for Standardization – ISO  
  [https://www.iso.org/home.html](https://www.iso.org/home.html)
- Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente  

**Journals**

- Critical Reviews in Food Science and Nutrition  
  [http://www.tandfonline.com/toc/bfsn20/current](http://www.tandfonline.com/toc/bfsn20/current)
- Food Chemistry  
  [https://www.journals.elsevier.com/food-chemistry](https://www.journals.elsevier.com/food-chemistry)
- International Journal of Food Science and Nutrition  
  [http://www.tandfonline.com/loi/ijif20](http://www.tandfonline.com/loi/ijif20)
- Journal of Agricultural and Food Chemistry  
  [http://pubs.acs.org/journal/iafcau](http://pubs.acs.org/journal/iafcau)
- Journal of Food Composition and Analysis  
- Journal of Association of Official Analytical Chemists International  
- Proceedings of the National Academy of Sciences  

**Food Law**

- Boletín Oficial de la Junta de Andalucía  
  [http://www.juntadeandalucia.es/boja](http://www.juntadeandalucia.es/boja)
- Boletín Oficial del Estado  
  [https://www.boe.es/](https://www.boe.es/)
- Diario Oficial de la Unión Europea  

**Other Websites of Interest**

- Confederación de Industrias Agro-Alimentarias de la Unión Europea - FoodDrinkEurope  
  [http://www.fooddrinkeurope.eu/](http://www.fooddrinkeurope.eu/)
- Federación Española de Industrias de la Alimentación y Bebidas – FIAB  
  [http://www.fooddrinkeurope.eu/](http://www.fooddrinkeurope.eu/)
### TEACHING METHODOLOGY
- Participatory Lecture
- Workshops
- Learning based on problem solving and case studies

### EVALUATION (INSTRUMENTS, CRITERIA AND PERCENTAGE ON THE FINAL QUALIFICATION, ETC.)

#### ASSESSMENT OF THE THEORY
- The evaluation of the theoretical part of the course will be done through written tests.
- There will be a midterm eliminatory exam after the first part of the course (item 1 to 10) and a final exam as established in the official calendar of the degree examinations.
- The scores of these tests will account for 70% of the final grade for the course.
- The approved control will not be saved for the next call.
- Overcoming any of the tests will not be achieved without an even and balanced understanding of all the material evaluated in this test.
- Attendance at lectures is mandatory and attendance will be required at a minimum of 70% of the appropriations to be submitted to the eliminatory control.

#### ASSESSMENT PRACTICES
- The completion of laboratory practices is mandatory, being essential to attend all sessions of the same and their improvement through a written test.
- Students who do not pass the test of practices, may recover a special examination upon completion of the course practices.
- The approved practices will be kept at the two academic years following the completion of the course.
- The rating of practices account for a 20% of the final grade for the course.

#### ASSESSMENT OF WORKSHOPS
- Performing workshops by students is mandatory. It will be about subject matter of the subject and it will be elaborated in groups of students.
- The qualification of the work will mean 10% of the final grade.

Overcoming the course will mean having approved each of the parts and carried out the workshops.

### DESCRIPTION OF THE EVIDENCE THAT WILL BE PART OF THE FINAL UNIQUE EVALUATION ESTABLISHED IN THE "REGULATIONS OF EVALUATION AND GRADING OF THE STUDENTS OF THE UNIVERSITY OF GRANADA"
### ONE FINAL EVALUATION
- Students who, for justified reasons, not been placed under continuous evaluation method take a final exam that will consist of a theoretical part and a practical part. The theoretical part will represent 75% practice and 25% of the final grade.
- Overcoming the course will be approved each of the parties.

### ADDITIONAL INFORMATION
- Regulations of assessment and grading of students at the University of Granada
- The realization of the practices and the passing of the corresponding exam will be an indispensable requirement to pass the subject.