CIHEAM
MAI CHANIA

International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM)

Mediterranean Agronomic Institute of Chania

Academic Year *2021 - 22*

M.Sc. in Food Quality and Chemistry of Natural Products (120 ECTS)

Increasing concern over issues on food and uses of natural products in the Mediterranean area have formed the basis for a Master of Science degree (120 ECTS) on Food Quality and the Chemistry of Natural Products.

The programme is chemistry-oriented and aims at the specialisation of students in Food Quality Concepts, Food Authenticity, various aspects of Natural Product Chemistry and the valorisation of Agri-food Renewable Sources for added-value products.

In the first year, the postgraduate programme promotes expertise on quality control and various natural product applications, as well as on high-technology up-to-date laboratory instrumentation with an analytical and preparative scope.

In the second year, students who have successfully completed the first year according to the CIHEAM/MAICh specific regulations develop a thesis based on research work.

The Master of MAICh (60ECTS) is awarded to those students who successfully complete the first year requirements but do not satisfy the additional required conditions which allow them to be accepted into the second year of the M.Sc. programme (120 ECTS) as stated in the CIHEAM/MAICh specific academic regulations.

The attainment of the M.Sc. degree qualifies them to successfully continue their doctorate studies and/or pursue an expert's career in both the public and private sector.

Scholarships

Qualified candidates may be eligible for scholarship covering fully or partly: tuition, teaching material, board, lodging, health insurance and compensation.

Requirements

Applicants must have the academic level that qualifies them to undertake postgraduate level studies in their home country or equivalent to a minimum of four years undergraduate studies. Their degree must also be in a discipline compatible with the area of specialization requested. Additional conditions may be required for certain programmes.

The working language of MAICh is English. Selection is made on the basis of the files submitted by applicants – priority being given to applicants from CIHEAM member countries, and takes account of their academic results, professional experience acquired in the chosen field of specialization, reference letters and their competence in English.

The documentation required by MAICh includes:

1. Academic records and transcripts
2. Graduation degree
3. Proof of english language competence
4. Two letters of recommendation.

M.Sc. Research Topics

- antioxidants and methods for their evaluation;
- natural product isolation and structural determination
- chemical fingerprinting as a tool for authentication
- the exploitation of inexpensive renewable sources and agro industrial waste in view of obtaining added value products
- the use of eco-friendly solvents for producing value-added commodities with nutritional and pharmacological potency
- analyses of food products
- analyses of natural products

How to Apply

Applications to study at MAICh must be made through the online application form that can be accessed by this link:

http://apply.maich.gr/

Information

For more information, visit our website at https://bit.ly/31PhQMy or send inquiries to sofia@maich.gr or panagiot@maich.gr.

Educational Sequence

The programme is organized in 5 Units (60 ECTS)

Semester I

October 2021 — February 2022

FQC510.11209.0 - FUNDAMENTAL OVERVIEWS (14 ECTS)

Content: Statistics
Organic Chemistry
Analytical Chemistry I
Biochemistry of Secondary Metabolism

FQC520.11806.0 - ADVANCED FOOD CHEMISTRY (16 ECTS)

Content: Foods/ Lipids/ Antioxidants
Water Relations in Food – Food Carbohydrates
Food Microbiology
Analytical Chemistry II
Functional foods and bioactive ingredients

Semester II

February 2022 — June 2022

FQC530.11209.0 - CHEMISTRY OF NATURAL PRODUCTS (12 ECTS)

Content: Chemistry of Terpenoids and Essential Oils
Chemistry of Alkaloids, Flavonoids and other Phenolics
Laboratory Techniques I
Laboratory Techniques II

FQC540.11512.0 - TOPICS IN FOOD SCIENCE (15 ECTS)

Content: Food safety management
Food Legislation
Products of Appellation of Origin
Quality Assurance

FQC500.1312.0 - EXTENDED ESSAY (3 ECTS)

Part 2 - The Master of Science Program

(Project - 9 months duration, 60 ECTS)

The programme aims to provide students with a comprehensive theoretical background and laboratory skills to successfully address current research and application issues in Natural Products, Renewable Sources Valorisation and Food Quality. Precisely, the candidates receive extensive training in quality control and various natural product applications as well as in high technology up-to-date laboratory instrumentation of analytical and preparative scope.

LC/MS-MS

GC/MS

Activities and Facilities

The main activities involve research

- on antioxidants and methods for their evaluation; chemiluminescence in-house techniques
- on chemical fingerprinting as tool for detection of origin for specific products
- on toxicant residue detection and quantitation
- on other analyses concerning the quality of food (oils, fats, vegetables, fruit, honey)
- on the exploitation of inexpensive renewable sources and agro industrial waste in view of obtaining added value products

The premises are equipped with GC/MS, LC-/MS and LC-MS/MS facilities.
Also, DAD and Refractive Index detector is available for High Performance Liquid Chromatography.

CIHEAM
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Services

The Laboratory of Analytical Chemistry at MAICh has been operating since 1992 as a laboratory for chemical analysis in the areas of natural products, foodstuffs of plant and animal origin and water. Since 2003, it is accredited according to ISO 17025 for various analyses it performs in oils and honey, and is active in the steady supply of analytical services to third parties.