**Science of Planet Earth and Nutrition (Including a Workshop on Food Education and Earth Science)**

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***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The course's general aim is to introduce students to the role of food, nutrients and terrestrial environmental conditions and dynamics in the health and well-being of the person, in particular the child.

The specific learning objectives of the course are:

For the Nutrition stream: provide students with up-to-date and specific knowledge and understanding of the biochemical structures of nutrients, their presence in the different food classes, food production, the hygienic-sanitary quality of food, biological pollution of foods and nutritional needs and the phenomena of malnutrition related to lifestyles with an outline of eating disorders.

For the Earth Sciences stream: to provide basic knowledge of the structure and "functioning" of the planet Earth, seen as a set of systems. The impact of man on the different systems and the repercussions this has on man's "health" and "well-being" will also be analysed.

Specific learning objectives common to both streams are: Knowing and applying the scientific method, helping students develop the ability to apply knowledge, understanding and judgment in the selection of scientific sources for the two disciplines, in the research and selection of international scientific databases, in the development of activities based on the scientific method and scientific research, in the analysis and selection of texts specifically dedicated to nursery and primary schools, in the scientific dissemination of experimental activities, and in the development of a specific language.

Intended learning outcomes

At the end of the course, students will master the scientific method as a means to understand the world of which the child is a part by including the main natural phenomena that children can witness within the more complex Earth system and recognise the effects of their own behaviours. in the natural world. They will also be able to know on a nutritional level what lifestyles and foods are suitable for children and adults and to deal with any states of malnutrition and pathological conditions deriving from incorrect lifestyles.

They will be able to design and implement didactic, frontal and workshop activities aimed at the health and well-being of little children and at understanding the phenomena governing the dynamics of the planet Earth with a view to developing an ecological awareness. They will be able to carry out simple models of scientific dissemination using the specific language of the discipline.

*Workshop on Food Education:* five workshop days in which the following topics will be developed: "organic foods", "water footprint and food pyramid", and "food labelling as a means for proper nutrition". For each activity you will be asked to produce an artifact related to the topic presented.

The real task to be produced will be a scientific poster relating to one of the three activities represented.

*Earth Sciences Workshop:* five days in which topics related to Earth Sciences will be developed such as: "Interaction between water and soil", "The atmosphere" and "Characteristics and dynamics of water". Each activity will be associated with the creation of an artifact related to the topic presented.

The real task to be accomplished will be a scientific poster relating to one of the three experiences. The results will be shared and discussed "on an equal footing".

***COURSE CONTENT***

*The Earth as a self-regulated system*: basic principles of terrestrial dynamics and evolution, the components of the Earth system, rocks, geological and geomorphological processes, the soil, *elements of environmental hygiene* with reference to the main pollutants and anthropogenic modifications in the different systems; *elements of food science*: biochemistry of foods, foods of animal and plant origin, modified, functional, and organic foods, GMOs, "*novel foods*", food security: *elements of food hygiene*: microbiological and hygienic aspects of the main foodstuffs, contaminating prokaryotes, food-borne infections, poisoning, adulterations, food preservation; *elements of human nutrition:* historical, anthropological and physiological aspects of the child’s use of food and nutrients. *Elements of analysis of malnutrition*: damage to health caused by incorrect lifestyles and pathological conditions, eating disorders.

The course is integrated with didactic-workshop activities held by experts and characterised by specific themes and methodologies agreed with the lecturer.

Each workshop session will be aimed at the production of a project/artefact assessed by the experts based on parameters shared with the lecturer and on criteria of: completeness, consistency, originality, didactic use.

***READING LIST***

– Alfonso Bosellini, *Le scienze della Terra* Zanichelli, Bologna: Second edition - 2020. Zanichelli, the following texts:

First biennium volume

ISBN: 9788808720580 (paper editon + digital) or ISBN: 9788808853691(digital edition)

Second biennium volume

ISBN: 9788808423962 (paper editon + digital) or ISBN: 9788808188052 (digital edition)

Fifth year volume

ISBN: 9788808503251 (paper editon + digital) or ISBN: 9788808953537 (digital edition)

– Optional, for in-depth and consultation only

Grotzinger J. P., Jordan T.H.:*Capire la Terra***,** 2016 - Zanichelli ISBN: 9788808821232 (paper + digital edition) or ISBN: 9788808126979 (edizione digitale).

– A.Andreoli, *Fisiologia e Nutrizione Umana,* Esculapio, Bologna, ISBN: 9788893851381.

– M.C.Marazzi, L.Palombi, S.Mancinelli, E.Buonomo, G.Liotta, P.Scarcella, *Nutrizione e Salute, la basi conoscitive per una corretta educazione alimentare,* Piccin, Padova, ISBN: 9788829928163.

– G. Rotilio, *Il migratore onnivoro,* Carocci, Roma, 2012. ISBN: 9788843065073.

– Optional, for in-depth and consultation only, C.Pignatti, *Biochimica della Nutrizione,* Esculapio, Bologna, 2022. ISBN: 9788893852852.

***TEACHING METHOD***

The teaching method includes lectures and classroom workshops or via web, according to the guideline of Covid 19 emergency. Lectures will focus on current syllabus contents, at national and international level; they will also introduce students to the identification and retrieval of sources. The course is held in Italian and will include the use of lexis, glossary, and text material typical of scientific literature, as well as educational tools, and databases in English.

***ASSESSMENT METHOD AND CRITERIA***

Assessment will take place through interim tests at the end of each disciplinary area. It will focus on students' acquisition of specific knowledge, their participation in course activities, their willingness to share contents (on traditional and multimedia tools), and their ability to identify and organise sources. During the workshop activities, assessment will be based on students' participation and ability to carry out cooperative and collaborative activities, on their personal contribution to the activities proposed, and management of their working time. The interim testing of acquired knowledge will include different activities, small group research and further investigation work, analysis of the evaluation grids specific for projects or practical assignments included in the workshop activities.

Interim tests may be scheduled at the end of the individual disciplinary areas.

The exam for the achievement of the ECTS credits consists of an oral exam with the lecturer on the analysis and critical reformulation of the contents and the evaluation of the laboratory activities provided by the course. To pass the exam, students must first have passed the workshop; the latter will add up to an additional 2 marks to the final assessment.

***NOTES AND PREREQUISITES***

During lectures and workshops students may be required to work on their personal laptops, tablets or smartphones.

In case the current Covid-19 health emergency does not allow frontal teaching, remote teaching will be carried out following procedures that will be promptly notified to students.

Further information can be found on the lecturer's webpage at http://docenti.unicatt.it/web/searchByName.do?language=ENG or on the Faculty notice board.