

## Course Outline: “7106 - Research and Development of New Products”

### 1. General information

<b>FACULTY/SCHOOL</b>	Physical Education, Sport Science & Nutrition		
<b>DEPARTMENT</b>	Nutrition & Dietetics		
<b>LEVEL OF STUDY</b>	Undergraduate		
<b>COURSE UNIT CODE</b>	<b>7106</b>	<b>SEMESTER</b>	<b>7<sup>th</sup></b>
<b>COURSE TITLE</b>	<b>Research and Development of New Products</b>		
<b>INDEPENDENT TEACHING ACTIVITIES</b> in case credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the entire course, give the weekly teaching hours and the total credits		<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>
Lectures		2	
<i>Add rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4</i>		<b>2</b>	<b>3</b>
<b>COURSE TYPE</b> <i>Background knowledge, Scientific expertise, General Knowledge, Skills Development</i>	Scientific expertise		
<b>PREREQUISITE COURSES</b>	No		
<b>LANGUAGE OF INSTRUCTION</b>			
<b>LANGUAGE OF EXAMINATION/ASSESSMENT</b>	Greek		
<b>THE COURSE IS OFFERED TO ERASMUS STUDENTS</b>			
<b>COURSE WEBSITE (URL)</b>			

### 2. LEARNING OUTCOMES

<p><b>Learning Outcomes</b></p> <p><i>The course learning outcomes, specific knowledge, skills and competences of an appropriate (certain) level, which students will acquire upon successful completion of the course, are described in detail. It is necessary to consult: Συμβουλευτείτε το</i></p> <p><b>APPENDIX A</b></p> <ul style="list-style-type: none"> <li><i>Description of the level of learning outcomes for each level of study, in accordance with the European Higher Education Qualifications' Framework.</i></li> <li><i>Descriptive indicators for Levels 6, 7 &amp; 8 of the European Qualifications Framework for Lifelong Learning and</i></li> </ul> <p><b>APPENDIX B</b></p> <ul style="list-style-type: none"> <li><i>Guidelines for writing Learning Outcomes</i></li> </ul>		
<p>The course allows the students to comprehend the necessary processes around the conception, design and development of novel foods. The knowledge in the fields of Biology, Biochemistry and Nutrition that the students have obtained along with novel things they will learn during the lectures will contribute to their awareness concerning the regulations and the scientific background of the procedure followed in order to develop novel food products. After the completion of the course, the students are anticipated to have obtained generic and more specialized knowledge regarding the rules that govern science, market and legislation for the development of novel foods. In particular, the trajectory from the conception and assessment of an idea for the design of a novel food towards its fulfilment will be extensively studied. Moreover, the students will also obtain the necessary knowledge and skills in order to continue their studies in postgraduate and PhD levels in relevant fields. They will also be able to seek research studies from the international literature by using the most established search engines (e.g., Pubmed) and, finally, they will develop the ability to publically present a scientific article, which is relevant to the research field of the course.</p>		
<p><b>General Competences</b></p> <p><i>Taking into consideration the general competences that students/graduates must acquire (as those are described in the Diploma Supplement and are mentioned below), at which of the following does the course attendance aim?</i></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><i>Search for, analysis and synthesis of data and information by the use of appropriate technologies, Adapting to new situations Decision-making Individual/Independent work Group/Team work Working</i></td> <td style="width: 50%; border: none;"><i>Project planning and management Respect for diversity and multiculturalism Environmental awareness Social, professional and ethical responsibility and sensitivity to gender issues Critical thinking Development of free, creative and inductive thinking .....</i></td> </tr> </table>	<i>Search for, analysis and synthesis of data and information by the use of appropriate technologies, Adapting to new situations Decision-making Individual/Independent work Group/Team work Working</i>	<i>Project planning and management Respect for diversity and multiculturalism Environmental awareness Social, professional and ethical responsibility and sensitivity to gender issues Critical thinking Development of free, creative and inductive thinking .....</i>
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<i>in an international environment Working in an interdisciplinary environment Introduction of innovative research</i>	<i>(Other.....citizenship, spiritual freedom, social awareness, altruism etc.) .....</i>
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- Individual/Independent work
- Group/Team work
- Working in an interdisciplinary environment
- Introduction of innovative research
- Development of free, creative and inductive thinking

**3. COURSE CONTENT**

- Necessity for the development of novel products
- Basic principles for the development of novel food products
- Patents
- Strategies for product development
- Development of ideas for novel products
- Novel foods
- Biofunctional ingredients of foods
- Organic foods
- Technologies of food processing
- Food biotechnology
- Food nanotechnology
- Study of successful case studies

**4. TEACHING METHODS - ASSESSMENT**

<b>MODES OF DELIVERY</b> <i>Face-to-face, in-class lecturing, distance teaching and distance learning etc..</i>	Face to face	
<b>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY</b> <i>Use of ICT in teaching, Laboratory Education, Communication with students</i>	<ol style="list-style-type: none"> <li>1. Lectures in power point documents</li> <li>2. Research or review papers in pdf documents</li> <li>3. Laptops for the projection of relevant videos</li> <li>4. The lectures in pdf documents that are announced to the students through the eclass platform</li> </ol> <p>The students get in touch with the instructor either directly (through face to face contact or email) or indirectly (through notes posted on the poster boards and the website of the Department).</p>	
<b>COURSE DESIGN</b> <i>Description of teaching techniques, practices and methods: Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, Internship, Art Workshop, Interactive teaching, Educational visits, projects, Essay writing, Artistic creativity, etc. The study hours for each learning activity as well as the hours of self-directed study are given following the principles of the ECTS.</i>	<b>Activity/Method</b>	<b>Semester workload</b>
	Lectures	25
	Product Preparation	40
	Literature analysis	10
	<b>Total</b>	<b>75</b>
<b>STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS</b> <i>Detailed description of the evaluation procedures:</i>  <i>Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice tests, short- answer questions, open-ended questions, problem solving, written work, essay/report, oral exam, presentation, laboratory work, other.....etc.</i> <i>Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students.</i>	The assessment of students is carried out in the Greek language. They are evaluated based on their performance in the written examination for the acquisition of basic knowledge (offered by the lectures) and their performance in the public presentation of a new innovative food that falls within the subject of the course. Performance in the presentation is evaluated based on the ability of students to make their classmates and the teacher share their questions and the results of their idea. The presentation is group and students are invited to present a new innovative food. The students' grade is based on the comfort during the presentation of the product assigned to them and on the in-	

	depth understanding of the subject to which it refers. At the end of the presentation, students receive questions from the teacher and their classmates to be evaluated for the knowledge they have acquired. The two (2) best proposals represent the department in the prestigious pan-Hellenic competition of innovative ecological food Ecotrophelia.
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## 5. SUGGESTED BIBLIOGRAPHY

### *-Suggested bibliography:*

- Σφλώμος Κωνσταντίνος, Βαρζάκας Θεόδωρος, Έρευνα και Ανάπτυξη Νέων Προϊόντων και Επιχειρηματικών Σχεδίων. Εκδόσεις Τσότρας, 2η Έκδοση, 2019.
- Functional food product development, Edited by Jim Smith and Edward Charter. Wiley-Blackwell, 2010.
- Fadi Aramouni, Kathryn Deschenes, Methods for Developing New Food Products: An Instructional Guide. DEStech Publications, Inc, 2014.

### *-Scientific Journals:*

- Food Chemistry
- Food Research International
- Food Analytical Methods
- Food and Bioproducts Processing
- Food Quality and Preference