COURSE OUTLINE

(1) GENERAL

SCHOOL	Food and Nutritional Sciences		
ACADEMIC UNIT	Food Science & Human Nutrition		
LEVEL OF STUDIES	Bachelor		
COURSE CODE	124	**SEMESTER**	9th
COURSE TITLE	Food Product Development		

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures and laboratory experiments	5 (2+3)	5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).	5	5

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Specialised general Knowledge
PREREQUISITE COURSES:	Physical Properties of Foods, Food Engineering, Food Preservation, Unit Operations in Food Engineering, Food Plant Design and Equipment, HACCP
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	no
COURSE WEBSITE (URL)	

(2) LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

The course material includes the:
Technological development of a new food product by turning an innovative idea into a novel product.
Student gains the knowledge of using a specific strategy to develop a product concept and to successfully introduce a novel food in the market.
Several scientific fields' knowledge and skills are interacted and applied, thus the student learns how to solve problems and to combine different information for a multidisciplinary task.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
Working independently	*Showing social, professional and ethical responsibility and sensitivity to gender issues*
Team work	*Criticism and self-criticism*
Working in an international environment	*Production of free, creative and inductive thinking*
Working in an interdisciplinary environment	*……*
Production of new research ideas	*Others…*
	…….

- Retrieve, analyze and synthesize data and information
- Produce new research ideas
- Team working
- Development of creative and free inquiry-based thinking to acquire advanced skills

(3) SYLLABUS

1. Introduction and overview. Chapters' description and specific goals
2. New trends in food products. Needs in the market. Examples of successful products
3. Stages of food product development
4. Idea generation. Examples. Ideas evaluation
5. Find market gaps. Perceptual maps. Examples (Lab. 1)
6. From an idea to a concept. Using an idea map for concept evaluation. Examples (Lab. 2, 3)
7. Process development. Examples. Patent search

8. Protocept (requirements, formulation, ingredients selection). Evaluation (Lab. 4)
9. Prototype. Process flow chart, specifications, packaging considerations, performance testing. Shelf life considerations (Lab. 5)
10. Scale-up. Final product specs. Use of experimental designs for product optimization (Lab. 6, 7)
11. Consumer testing. Sensory evaluation, best performed products selection (Lab.8)
12. Product roll out. Roadblocks to success
13. Project presentations (Lab. 9)

The above lectures will be complemented with laboratory experiments on the following topics:

1. Perceptual map creation
2. Questionnaire for ideas selection
3. Concept development. Concept evaluation through
4. Protocept. Formulation development (raw materials, amounts)
5. Prototype. Process development (process conditions, packaging, shelf-life)
6. Experimental design (response and design parameters, use of software)
7. Food product optimization (selected products upon experimental designs)
8. Sensory evaluation. Final products (SIMS presentation)
9. Final products presentation and discussion

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	In class teaching (power point presentations) Distance learning (ppt, selected sites, review papers, ift, patents) Communication: e-class aua, e-mail
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	PPts , e-learning Notes Image Analysis Software (Image ProPlus) Sensory Evaluation Testing Software (SIMS 2000)
TEACHING METHODS *The manner and methods of teaching are described in detail.* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.* *The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS*	
STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-*	- Final written examination (50% of the final course grade) that includes: - Short answer questions - Judgment questions

Activity	***Semester workload***
Lectures	36
Laboratory meetings	24
Term papers	35
Personal study	32
Total contact hours and training	***127***

answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	II. Protocept development in labor (15%) III. Term paper (35%)

(5) ATTACHED BIBLIOGRAPHY

Books

- Brody, A.L., and Lord, J.B. 2007.New Food Products for a Changing Marketplace Taylor and Francis, Inc., New York
- Fuller,G.W. 1994. New Food Product Development: From Concept to Marketplace CRC Press, Washington D.C. 0849380022, 9780849380020
- Fuller, G.W. 2010, Food, Consumers, and the Food Industry: Catastrophe or Opportunity? Taylor & Francis, 0849323266, 9780849323263
- Moskowitz, H. R., Saguy, I. S., Straus, T. 2010. An Integrated Approach to New Food Product Development. CRC Press.
- http://class.fst.ohio-state.edu/fst650/650%20Lecture%20Notes.htm (Ohio State University Lecture notes)

WEb sites-Journal:

- http://www.preparedfoods.com/ (Prepared Foods).
- http://www.foodproductdesign.com/toolbar.html (Food Product Design).
- http://www.foodnavigator.com/
- http://www.ift.org/food-technology.aspx
- http://www.bakeryandsnacks.com
- LWT-Food Science & Technology