COURSE OUTLINE

1. GENERAL

SCHOOL	SCHOOL OF HEALTH AND CARE SCIENCES		
ACADEMIC UNIT	DEPARTMENT OF BIOMEDICAL SCIENCES- AESTHETICS AND COSMETIC SCIENCE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	3063	**SEMESTER**	3
COURSE TITLE	BASIC PRINCIPLES OF DERMATO-COSMETIC SCIENCE		
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		4	
Laboratory exercises		-	
			4
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).			
COURSE TYPE *general background, special background, specialised general knowledge, skills development*	SBC		
PREREQUISITE COURSES:	NO		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
COURSE WEBSITE (URL)	https://bisc.uniwa.gr/course/vasikes-arches-dermatokosmitologias/ https://eclass.teiath.gr/courses/AISTH103/ https://ocp.teiath.gr/courses/AISTH_UNDE100/		

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 aim of the course is for students to understand the development of the Dermato-Cosmetic Science and to learn to a great extent the chemical structures and the physicochemical properties of the basic ingredients used for the development, formulation, physicochemical and microbiological stability of the dermato-cosmetic products.

Cosmetics that contain bio-active substances and possess a dermato-cosmetic activity along with dermatological properties and can support the activity of pharmaceuticals often called dermato-cosmetics.

The goal of the course is for the students to learn the molecular approach to design dermato-cosmetics and products of skin topical application

Learning outcomes:
After the end of the course students will be able to know:

- The physicochemical properties of the basic ingredients that are used for the design, development and formulation, physicoshemical and microbiological stability of cosmetic products

- The physicochemical properties of multiphase dispersed systems that are used in the formulation of cosmetic products

- The application of multiphase dispersed systems for the development of cosmetic products

- To design simple formulations of dermato-cosmetic products

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

Working independently, team work, working in an interdisciplinary environment, working in an international environment, Search for, analysis and synthesis of data and information, with the use of the necessary technology, Production of new research ideas, Production of free, creative and inductive thinking

3. SYLLABUS

1. Products of skin topical application, introduction to the Basic Principles of Cosmetic Science. The social impact of Cosmetic Science. Basic Principles of Skin Physiology. Application of the cosmetics to the skin. Classification of the cosmetics by their type of action, type of cosmetic formulation and chemical synthesis. Basic principles for the designing a new formulation. Criteria for the choice of the ingredients. Precautions.
2. Multiphase dispersed systems. Surfactants. Interphase. Mechanism of absorption of the surfactants to the interphase.
3. Classification of surfactants according to their chemical structure: Hydrocarbons, Classification of the surfactants by the Hydrophilic-lipophilic balance (HLB)-activity.
4. Carbon-silicon surfactants. Classification and physicochemical mode of action. Surfactants derived from biotechnological resources-Biosurfactants.
5. Colloids. Thermodynamic approach of colloids. Electrical and physicochemical properties of colloids. Stability. Solubilization, Micelles.
6. Emulsions. Emulsification-Thermodynamics. Classification and determination of the various types of emulsions. Classification of emulsifiers. (Gibbs, Langmuir). Criteria for the selection of the type of emulsifiers.
7. Stability and Instability of emulsions. Thermodynamics.
8. Stability tests of the emulsions, Accelerated tests.
9. Preservation of cosmetic products. Annex VI 76/768 EEC, 2003/15/EC, 2007/17 /EC and 2007/22/EC. Classification of preservatives by their chemical structures, alternative preservatives, self-preserving cosmetics. Preservative efficacy tests for topical skin products according to the European Pharmacopoeia and Greek legislation.
10. Rheology, thixotropy, antithixotropy. The influence of rheological properties of the systems on the development and manufacturing process of cosmetics.
11. Oxidation of cosmetic ingredients. Catalysis of oxidation. Classification of antioxidants and mechanism of action of phenolics, Natural antioxidants for the stability of cosmetic formulations.
12. Colors. Basic principles. Natural colors. Synthetic colors. Inorganic colors. Pigments. Stability of colors. Chemical properties.
13. Introduction to the basic method of scaling up. Introduction to the labeling and regulatory affairs of cosmetic products
14. The Science of Cosmetics-future technologies. Cosmetics and environment.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face-to-face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Use of ICT in teaching, Support of the learning process through e-class for the theoretical and laboratory part, videos of lectures pf the course under the auspices of the Institution, Exercises through e-class.
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*	***Activity*** — *Semester workload* Lecture — 80 Educational visit — 10 Independent study — 30 Course total — *120*
STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *Language of evaluation, methods of evaluation, summative or conclusive, multiplechoice questionnaires, short-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.*	FINAL WRITTEN EXAMINATION (100%): Multiple choice questionnaires, open-ended questions, characterization of sentences as True or False, problem solving Specifically-defined evaluation criteria are given, and if and where they are accessible to students.

5. ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

1. Τσιρίβας Ε., Βαρβαρέσου Α. Παπαγεωργίου Σ. Βασικές Αρχές Κοσμητολογίας ISBN: 978-960-394-920-6 ΕΠΙΣΤΗΜΟΝΙΚΕΣ ΕΚΔΟΣΕΙΣ ΠΑΡΙΣΙΑΝΟΥ ΑΕ, 2012.
1. Sakamoto K., Lochhead R., Maibach H. and Yamashita Y. Cosmetic Science and Technology: Theoretical Principles and Applications, eBook ISBN: 9780128020548 Hardcover ISBN: 9780128020050, Elsevier (2017).
2. Hibbot H.W. Handbook of Cosmetic Science: An Introduction to Principles and Applications1483186474, 9781483186474, Elsevier (2016).
3. Mewis J. and Wagner N.J., *Colloidal Suspension Rheology*, ISBN: 9781107622807 Cambridge University Press: Cambridge, UK (2013).
4. Schlossman M.L. The Chemistry and Manufacture of Cosmetics. Vol 1 Science ISBN-13: 978-1932633474 4th edition, Allured Publishing Co., USA (2008).
5. Schueller R. and Romanowski P. Beginning Cosmetic Chemistry. 3rd edition ISBN-13: 978-1932633535 Allured Publishing Co.,USA (2009).

- Related academic journals: International Journal of Cosmetic Science, Journal of Cosmetic Science, Journal of Cosmetic Dermatology, Materials, Processes, Molecules