ANNEX 2 – COURSE DESCRIPTION

Course Title	**Research Methodology**				
Course Code	**DLPHA706**				
Course Type	Compulsory				
Level	Post-graduate (Master)				
Year / Semester	1st / 2nd Semester				
Teacher's Name	Dr Aggeliki Stamouli, Dr Panagiotis Theodosis Nompelos				
ECTS	7	Lectures / week		Laboratories/week	-
Course Purpose	The primary aim of this course is to provide postgraduate students with adequate knowledge of research methodology, preparing and familiarizing them with both fundamental and advanced methods of scientific research, as well as the use of statistical tools for data analysis. The goal is to offer students the appropriate theoretical framework and practical knowledge to develop critical thinking and skills that will enable them to design, implement, conduct, and interpret research studies (quantitative and qualitative studies) in the field of health sciences (pharmacy, cosmetology, and natural products). Additionally, the course aims to provide students/trainees with an in-depth understanding of all stages of conducting scientific research, specifically: 1. **Formulating the Research Question:** identifying the research problem, reviewing existing literature, and expressing research questions/hypotheses. 2. **Research Design:** selecting the research approach (quantitative, qualitative, or mixed methods), defining the sample and sampling techniques, and choosing data collection tools (e.g., questionnaires, experiments, interviews). 3. **Data Collection:** implementing data collection procedures and ensuring data reliability and validity. 4. **Data Analysis:** applying descriptive and inferential statistics in quantitative research or qualitative data analysis methods in qualitative research. 5. **Conclusions & Discussion:** comparing findings with existing literature, drawing conclusions, suggesting directions for future research, acknowledging study limitations, and addressing ethical considerations. 6. **Research Presentation**: Writing of scientific findings from the selected academic literature related to cosmetology and natural products and presentation of them at relevant conferences.				
Learning Outcomes	**By the end of the program students will be able to:** (a) Recognise the fundamental principles, stages, and types of scientific research and statistics (1-4). (b) Select the appropriate research methods based on the nature of scientific inquiry (quantitative/qualitative).				

	(c) Develop a research proposal, formulate research questions and hypotheses. (d) Design and implement a scientific research study. (e) Apply various sampling methods and techniques and assess the representativeness of the sample. (f) Identify variable types, relationships between variables, and classify them as dependent or independent. (g) Recognise the measurement scales and the concepts of reliability and validity in quantitative research. (h) Collect, organize, process, and analyze data using statistical tools and statistical software (SPSS). (i) Present, interpret, and critically evaluate research methodology and findings with scientific accuracy. (j) Conduct literature searches, write academic essays, and publish research according to academic standards.		
Prerequisites	-	Corequisites	-
Course Content	Introduction to scientific research. Sources of knowledge. The scientific method and the production of new knowledge. Ethical considerations in conducting research. Types of scientific research: Quantitative research, Qualitative research, Systematic literature review research, Mixed-methods research Secondary analysis and existing data. Literature review Research design development, the research proposal/protocol, formulating research questions and hypotheses Methodology description (quantitative, qualitative, and mixed-methods approaches) Conducting research using questionnaires, reliability and validity of questionnaires (standardization) Descriptive Statistical Data Analysis – Application in Biostatistics Inferential Statistics (estimation statistics and hypothesis testing) Population, sample, data collection methods in quantitative and qualitative research Data analysis in quantitative data analysis using specialized software (SPSS), presentation and interpretation of results Qualitative data analysis and presentation of findings Writing and Presenting Research Findings: Structure, references, and bibliography, presentation techniques		

	Review and revision
Teaching Methodology	The course is delivered **entirely online** and includes: • **Online Lectures**: Delivered through PowerPoint presentations and interactive multimedia materials (videos, narrated presentations, interactive learning scenarios, and gamified activities). • **Electronic Notes**: Available through the Moodle platform, covering the theoretical background. • **Online Communication and Collaboration Tools**: Including videoconferencing, chat rooms, forums, wikis, and web links for student interaction. • **Core and Supplementary Reading Materials**: Books, journal articles, conference presentations, and readings, all accessible via the online platform. The course encourages the formation of an **online learning community**, fostering interaction between students and instructors, as well as peer-to-peer engagement.
Bibliography	**Main Textbooks** 1. Lagoumintzis, G. (2015). Research Methodology in Health Sciences. Kallipos Publications. 2. Sahini-Kardasi, A. (2005). Research Methodology: Applications in the Health Sector (2nd ed.). Vita Publications. 3. O'Brien, P., & Broughton Pipkin, F. (Eds.). (2017). Introduction to Research Methodology for Specialists and Trainees. Cambridge University Press. 4. Apostolakis I., Daras T., Stamouli M.A. (2022), SPSS Exercises in Health, Papazisis Publications 5. Frederick J.K. (2019) Conducting research in health sciences, Principles, prosses and methods. Sage Publications. 6. Galanis P. (2015). Methodology of data analysis in health sciences. Applications with IBM SPSS Statistics. Broken Hill Publishers LTD & Paschalidis SA, Nicosia. **References** 1. Haynes, B.R., Sachett, D., Guyatt, G., & Tugwell, P. (2006). Clinical Epidemiology: How to Do Clinical Practice Research. Lippincott Williams and Wilkins, Wolters Kluwer, New York. **2.** A variety of scientific articles which are mentioned in detail in the study guide
Assessment	The course assessment includes formative, self-evaluation, and summative assessments: • Final Written Examination (50%): Covers all course topics. • Two Assignments During the Semester (40%). • Multiple Educational Activities (10%): o Two selected activities are graded. o Includes progressive difficulty questions, multiple-choice or

	true/false questions (with justification), problem analysis and solving tasks, self-assessment exercises, quizzes, and revisions per module. All assessment criteria and evaluation tools, along with their weightings, are clearly communicated to students to enhance learning outcomes and maintain course quality. The overall goal is to ensure better comprehension and assimilation of the course material, preparing students both theoretically and practically for the final written examinations.
Language	Greek and English