



Course Syllabus

Course Code BISC-593I	Course Title Thesis I - Immunology	ECTS Credits 7.5
Prerequisites None	Department Life Sciences	Semester Fall/Spring
Type of Course Concertation Immunology	Field Biomedical Sciences	Language of Instruction English
Level of Course 2 nd Cycle	Lecturer(s) Dr. Christos Papanephytous Dr. Vicky Nicolaidou & Assigned Supervisor	Year of Study 1 st
Mode of Delivery Face to face	Work Placement N/A	Co-requisites None

Course Objectives:

The main objectives of the course are to:

- Become familiar with the basic principles of scientific research and the various types of scientific research design in the biological sciences.
- Demonstrate how to prepare and plan a research project.
- Develop information literacy skills (defining information needs, researching and critically evaluating information).
- Use appropriate tools to review and evaluate research evidence.
- Enable students to develop skills in planning, writing a research proposal, and making a risk assessment of expected results.
- Familiarize themselves with the different ways of collecting quantitative and qualitative data.
- Become familiar with performing fundamental quantitative data analyses using the appropriate statistical programmes.
- Be familiarized with the process of quantitative data analysis.
- Make students aware of the ethical issues of writing an undergraduate research paper, including integrity, copyright, and citation.

Learning Outcomes:

After completion of the course students are expected to be able to:

1. Formulate clear research hypotheses
2. Identify and use health information resources (e.g. Pubmed, ScienceDirect, Scopus).

3. Identify and critically appraise scientific information (peer-reviewed and public-directed information).
4. Explain the main types and subtypes of research (quantitative and qualitative) and how they can be used in the field of Biomedical Sciences.
5. Understand the stages of the research process (from the definition of the problem to the processing and analysis of the results) and implement them in their project.
6. Formulate straightforward research questions, hypotheses, aims, and objectives.
7. Understand the different types of data and data collection methods and be able to select the most appropriate for their project.
8. Conduct quantitative data analysis using the most appropriate statistical software (e.g., Excel, SPSS, Jamovi, Jasp).
9. Understand the process of qualitative data analysis.
10. Present and support research data using the most appropriate means that fit the data and the study research question.
11. Understand the different types of references and use referencing management software (e.g., RefWorks, Mendeley).
12. Understand the process of scientific writing and be able to produce scientific documents directed to the scientific community and the general public.
13. Express ethical considerations related to human subject research and ethical use of published information.

Course Content:

1. An introduction to the scientific method; scientific research and research question; aims, objectives and hypothesis.
2. Types of studies (primary/secondary; basic/applied; quantitative/qualitative) and their use/application in Biomedical Sciences.
3. Literature resources and availability. Systematic search for information.
4. Reviewing and reporting published literature – critically assessing scientific information.
5. Citation of published research and avoidance of plagiarism.
6. Research Design; Experimental methods/protocols.
7. Data types and data collection methods.
8. Qualitative/Quantitative data analysis and methods of data presentation.
9. Statistical tests/analysis of research results; SPSS, Jamovi, Jasp
10. Writing of a research proposal/dissertation
11. Research ethics
12. Research Proposal: In addition to attending a series of lectures, students are required by the end of the course, to have submitted and approved by their assigned supervisor a written proposal on their research project assigned. The proposal should follow the specified guidelines: relevant background and literature, aims and objectives of the research project, suggested procedures and methodologies and reagents to be used, and a risk analysis of

expected results. The proposal must also cite and refer to all literature sources used to write the proposal.

Learning Activities and Teaching Methods:

Lectures, presentations, class discussions, analysis, and presentation of scientific data, results and literature. Writing the research proposal for the research project assigned to the student.

Assessment Methods:

Project, Assignments, Final Examination

Required Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Students are advised to read the updated peer-reviewed literature (primary and secondary) based on the project type and topic.				

Recommended Textbooks/Reading:

Title	Author	Publisher	Year	ISBN
Introduction to research methods: a practical guide for anyone undertaking a research Project	Catherine Dawson	Robinson	2019	9781408711040 (ebook) 9781408711057 (paperback)
A Survival Guide for Health Research Methods	Tracy Ross	McGraw-Hill Education	2012	Available from: ProQuest Ebook Central
Exploring Research	Neil Salkind	Pearson	2018	1292156309 (ebook) 9781292156309 (ebook)
Cite It Right: The SourceAid Guide to Citation, Research, and Avoiding Plagiarism (Paperback), 2 nd Ed.	Julia Johns, Sarah Keller	SourceAid, LLC;	2005	ISBN: 0977195708
Or the latest edition of the above-mentioned books. Updated scientific articles (primary and secondary) based on the project				