ABS415 – Innovation Studies

Course Title	Innovation studies				
Course Code	ABS415				
Course Type	Elective				
Level	Bachelor (1st Cycle)				
Year / Semester	5th and 7th semester				
Teacher's Name	Dr Athanasia Nalmpanti				
ECTS	6	Lectures / week	3	Laboratories / week	
Course Purpose	The purpose of this course is to provide students with a comprehensive understanding of the principles and practices of innovation within the biomedical field. The course aims to equip students with the knowledge and skills necessary to translate scientific discoveries into practical applications, navigate the complexities of intellectual property rights, engage in technology transfer, and commercialize biomedical innovations. Through a combination of theoretical insights and practical case studies, students will learn how to effectively manage the innovation process and address the unique challenges and opportunities presented by the biomedical industry.				
Learning Outcomes	Upon successful completion of this course, students will be able to: • Demonstrate a thorough understanding of the innovation process in the biomedical sciences. • Identify and analyze key factors that drive innovation in the biomedical field. • Apply knowledge of intellectual property rights to protect and manage biomedical innovations. • Understand the principles and practices of technology transfer and their application in the biomedical industry. • Develop strategies for the commercialization of biomedical research innovations. • Assess the ethical and regulatory considerations related to biomedical innovation. • Evaluate case studies of successful and unsuccessful biomedical innovations to extract valuable lessons and best practices.				
Prerequisites	None	Co-requisites	None		

Course Content	**Introduction to Innovation in Biomedical Sciences** • Definition and importance of innovation • Historical perspectives on biomedical innovations • The role of innovation in advancing healthcare **The Innovation Process** • Stages of the innovation process: ideation, development, and commercialization • Models of innovation: linear vs. non-linear approaches • Factors influencing innovation: market needs, technological advances, and regulatory environment **Intellectual Property Rights in Biomedical Sciences** • Overview of intellectual property (IP) rights: patents, trademarks, copyrights, and trade secrets • Strategies for protecting IP in the biomedical field • Managing and licensing IP for biomedical innovations **Technology Transfer** • Principles of technology transfer • Mechanisms of technology transfer: licensing agreements, spin-offs, and partnerships • Role of technology transfer offices (TTOs) and incubators **Commercialization of Biomedical Innovations** • Pathways to market for biomedical products • Business models for biomedical startups • Strategies for scaling and sustaining biomedical innovations **Ethical and Regulatory Considerations** • Ethical issues in biomedical innovation • Regulatory requirements and compliance in the biomedical industry • Balancing innovation with patient safety and public health **Case Studies in Biomedical Innovation** • Analysis of successful biomedical innovations: lessons learned and best practices • Examination of challenges and failures in biomedical innovation • Discussion of emerging trends and future directions in biomedical innovation

Teaching Methodology	Ex cathedra lectures, class discussions and presentations Lectures, discussions and presentations by students. Students will also be required to watch specially selected videos (mostly documentaries) to complement their reading of the course material. Students will be invited to attend at least one external seminar (public talk, conference, academic presentation) on a relevant topic. If such opportunities will not be available during the course of the semester, a video recording of a relevant presentation abroad will be shown and discussed in class
Bibliography	(a) Textbooks: Exploring Innovation by David Smith, Mc Graw Hill, 3rd edition, 2013 Innovation and Entrepreneurship in Biotechnology, an International Perspective: Concepts, Theories and Cases by Damian Hine and John Kapeleris, Edward Elgar Publishing (January 27, 2008) The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail by Clayton M. Christensen, Harvard Business Review Press; Reprint edition (January 5, 2016) (b) References: The Oxford Handbook of Innovation by Jan Fagerberg, David Mowery and Richard Nelson (Eds.), Oxford University Press, latest edition
Assessment	(a) Methods: Students will be assessed with coursework that involves a midterm test and a final exam. (b) Criteria: The assessment criteria are assignment-specific and range from testing problem solving skills, knowledge of the material. (c) Weights: Mid-term (40%) and final examination (60%)
Language	Greek / English