

Refining project pitches and proposals (AB000009)

1. language

English

2. course contents

Coordinator: Prof. Stefani Francesca Romana

Year Course: 1st year

Semester: 2nd semester

UFC: 8

Modules and lecturers:

- ACADEMIC GRANT WRITING FOR REGENERATIVE MEDICINE APPLICATIONS: SALIENT FEATURES OF A SUCCESSFUL PROPOSAL (AB000075) - 2 UFC - SSD MED/46 - Prof. Silini Antonietta Rosa
- ACADEMIC GRANT WRITING FOR REGENERATIVE MEDICINE APPLICATIONS: SALIENT FEATURES OF A SUCCESSFUL PROPOSAL LAB (AB000076) - 1 UFC - SSD MED/46 - Prof. Silini Antonietta Rosa
- CRITICAL REASONING - ANALYSIS OF CURRENT SCIENCE (AB000077) - 2 UFC - SSD MED/46 - Prof. Stefani Francesca Romana
- CRITICAL REASONING - ANALYSIS OF CURRENT SCIENCE LAB (AB000078) - 1 UFC - SSD MED/46 - Prof. Stefani Francesca Romana
- THE PROCESSES OF PATENT APPLICATION (AB000079) - 1 UFC - SSD MED/46 - Prof. Cristiano Luigi
- THE PROCESSES OF PATENT APPLICATION LAB (AB000080) - 1 UFC - SSD MED/46 - Prof. Cristiano Luigi

3. BIBLIOGRAPHY

Articles downloaded from Pubmed and videos (Youtube, TED Talks) will be used and will be provided to the students.

Academic Grant Writing For Regenerative Medicine Applications: Salient Features Of A Successful Proposal

“Scientific Writing and Communication, 4th edition” by Angelika H Hofmann, Oxford University Press

“Medical and Scientific English” Jacopo D’Andria Ursoleo and Kate Gralton, Pearson

Critical Reasoning - Analysis Of Current Science

Machi, L. A., & McEvoy, B. T. (2016). The Literature review: Six Steps to Success

The Processes Of Patent Application

Updated scientific papers and the slides shown will be provided to students during the course. The following textbooks and articles may be used for support and consultation on basic topics:

A. Stasi, *Biotechnology Law and Policy. Emerging Legal Issues, Cases and Materials*, Springer, 2023

“Codice della proprietà industriale” (CPI) (<https://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2005-02-10;30>)

“European patent convention (EPC) for patent law under the European patent convention” (<https://www.epo.org/law-practice/legal-texts/epc.html>)

“Guidelines for examination in the European patent office” (<https://www.epo.org/law-practice/legal-texts/guidelines.html>)

The Processes Of Patent Application Lab

Materials provided during the lab.

4. learning objectives

The aim of this course is to understand the key aspects to consider when planning, designing and drafting a research project in regenerative medicine. The course reviews the basic steps in writing a grant proposal, including its planning, the research to be done, the different narrative methods, as well as the best practices to be implemented to obtain potential funds. The course also aims to deepen the concept of critical thinking and its applications in science as well as to provide the main knowledge about patent application since the beginning of the drafting activities to its evaluation procedures.

Knowledge and understanding

Understand how proper technical-scientific language and narrative tools can improve the quality of grant applications. Understanding how critical thinking can foster the ability to undertake the cognitive process of complex reasoning, non-routine problem solving, and constructing and evaluating evidence-based arguments. By the end of the course, the student must have developed the ability to classify, summarize, and compare theories, and to recall and understand knowledge, to know and understand the key points for drafting patents application in the context of the protection of intellectual property in regenerative medicine.

Applying knowledge and understanding

Learn to align the grant proposals with the requirements and objectives of the chosen funding body. Learn how to apply narrative tools and proper language when writing grant proposals to make them more informative, persuasive, and engaging. Develop critical thinking as part of research in the field of translational experimental biology, with particular reference to regenerative medicine to pursue evidence in making decisions, extrapolate conclusions and develop innovative ideas. By the end of the course, the student must have developed the ability to logically apply methods to evaluate hypotheses, to evaluate data for determination of its validity, to understand, evaluate, and create arguments, and to develop the skills and knowledge of the key aspects of drafting a patent application.

Making judgements

Acquire transversal skills such as the ability to critically examine and improve a research project/funding proposal in the field of regenerative medicine. Develop critical thinking in order to objectively analyze information, situations, and biological phenomena, and to critically evaluate conclusions and facilitate decision-making processes.

Communication skills

Improve written and oral communication skills, correctly using technical-scientific language and suitable narrative tools for the purpose of obtaining grants in the regenerative medicine field, to effectively communicate with scientists and for drafting projects and patents application.

Learning skills

The student must be able to demonstrate a good capacity for self-assessment, to have developed the ability to make logical conclusions based on evidence, to logically formulate a hypothesis based on previous knowledge, to be continuously updated through scientific articles, online platforms (NCBI, ATCC, Human cell atlas, etc.), reference legislation, specialized seminars, and conferences. By the end of the course, the student should be able to find potential open calls for grant applications in regenerative medicine and fully understand the application process.

5. prerequisiteS

The students must have advanced knowledge of biology, physics and chemistry acquired during their Bachelor degree.

English level of B2 (CEFR).

6. TEACHING METHODS

The teaching methodology is based on frontal lessons that will be delivered in presence from the classrooms of the Università Cattolica del Sacro Cuore, in compliance with security measures.

During the lessons, lectures will explain the topics of their respective disciplines underlying their multi- and inter- disciplinary aspects and helping learners to integrate new knowledge.

A discussion-based learning approach and in-class debates on controversial topics will be implemented and used throughout the course to develop the student's critical-thinking skills in real-time interactions with other viewpoints as well as improve their communication skills. They will be encouraged, with the support of the lecturer, to use the most appropriate terminology.

7. OTHER INFORMATIONS

Lecturers are available for reception by appointment after contacting them by email:

Antonietta Rosa Silini: antonietta.silini@poliambulanza.it

Francesca Romana Stefani: francesca.stefani@poliambulanza.it

Luigi Cristiano: luigi.cristiano@iusspavia.it

Lecturers may send communications to the class via email and/or via the BlackBoard platform.

NOTE ON STUDENTS' RESPONSIBILITY

The responsibility for learning falls increasingly on students, as they advance through the course; hence, ultimately, the commitment and the dedication to learn must come from them.

As members of the Università Cattolica S. Cuore learning community, students are expected to respect the intellectual property of course instructors. All course materials presented to students are the copyrighted property of the course instructors and are subject to the following conditions of use:

- 1) Students may not record nor reproduce lectures or any other classroom activities, unless differently specified by the instructor; however, they may use the recordings for their own course-related purposes only.
- 2) Students may not reproduce and/or post any course material provided by the instructors online or distribute them without the advance written permission of the course instructor and, if applicable, of any students whose voice or image is included in the recordings.
- 3) Any students violating the conditions described above may face academic disciplinary sanctions. As members of a learning community, students are expected to respect the time and efforts of their fellow classmates. Therefore, the use of social media and other electronic distractions that can disrupt the concentration of other students in the classroom is NOT allowed.

NOTE ON ACADEMIC INTEGRITY AND CHEATING POLICY

The principles of truth and honesty are fundamental to the educational process and the academic integrity of the University. All students have a right to expect fair and honest evaluation of their work. **CHEATING UNDERMINES THIS EXPECTATION AND WILL NOT BE TOLERATED.**

Students must avoid the following misconduct behaviors that are considered as cheating:

DO NOT exchange ID badges to collect presence among classmates who cannot attend a lecture.

DO NOT share answers of quizzes during exams.

Any student found by the instructors to be cheating will receive a failing grade for the exam or other graded work, and will be reported to the Course's Coordinator and Instructors' Committee. The instructors may, at their discretion, decide to give a failing grade for the course in severe cases of academic dishonesty.

8. learning verification methods

The achievement of the learning objectives will be assessed by an end-of-course written and oral examinations.

The objective of the final examination will be to verify the level of competence achieved, assessing the student's ability to describe a specific topic in a relevant and concise manner with clarity of exposition and command of language.

The final mark will be expressed in thirtieths and will be the result of the weighted average of the marks obtained in the 6 separate modules. To obtain honors, the student must achieve a mark of 30/30 in the 6 modules of the course.

Academic Grant Writing For Regenerative Medicine Applications: Salient Features Of A Successful Proposal

Students will be asked to critically review a grant application and provide suggestions for improvements (written exam).

Critical Reasoning - Analysis Of Current Science

Students will be asked to write a mini review (1 page) on a given topic (written exam).

The Processes Of Patent Application

Students will be asked to answer 3 questions (1 long answer, 2 multiple-choices) providing their advice on IP related situations.

The Processes Of Patent Application Lab

Students will be asked to draft a set of claims for a patent, having been provided with a report of invention.

9. program

Academic Grant Writing For Regenerative Medicine Applications: Salient Features Of A Successful Proposal

- Identifying a funding opportunity /agency
- Understanding the different sections in a grant proposal
- How to prepare a coherent proposal
- How to revise a proposal based on comments from reviewers

Academic Grant Writing For Regenerative Medicine Applications: Salient Features Of A Successful Proposal Lab

- Preparing parts of a grant proposal (significance and impact, innovation, preliminary data, specific aims, abstract/executive summary, budget, etc)
- Revising a proposal based on reviewer comments

Critical Reasoning - Analysis Of Current Science

- Bibliographic research – academic scientific databases
- How to write a scientific original paper/review
- How to read a scientific original paper/review - strategies for judging the plausibility of premises

and the relevance of arguments

- Oral presentations

Critical Reasoning - Analysis Of Current Science Lab

- How to write a scientific original paper/review – practical part
- Debating and oral communication
- Oral presentations – practical part

The Processes Of Patent Application

- Overview of different kinds of IP protection
- What is a patent, which are the requirements to get a patent
- Structure of a patent
- Different patent procedures: Italy, EPC, PCT

The Processes Of Patent Application Lab

- Analysing a report of invention
- Drafting the claims
- Drafting the description
- Prosecuting the patent application