Teaching guide

IDENTIFICATION DETAILS

Degree:	Diploma in Biotechnological Research Methodology (UFV-Awarded Title associated with Biotechnology)
Field of Knowledge:	Science
Faculty/School:	Experimental Science
Course:	JOURNAL CLUB AND SCIENTIFIC WRITING
Type:	Compulsory Internal
ECTS credits:	4
Year:	3
Code:	20115
Teaching period:	Sixth semester
Teaching type:	Classroom-based
Language:	English
Total number of student study hours:	100

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SUBJECT DESCRIPTION

2. COURSE DESCRIPTION
2.1. Summary

To provide students with knowledge, skills and techniques that allows them to use the English language as a tool for work, research or documentation. Educate and train the students to enhance/improve effective communication in English within their professional field of study.

The language of science is communicated by articles written in periodically published scientific journals.
Scientific peer review is a process that ensures an optimal and trustful way for the communication of results that meets the gold standards of science.
That process goes like this:
1) A research group, to prove a concept (hypothesis) true or false, set up a group of experiments trying to prove that idea correct.
2) They will write it up as a scientific article and submit it to be published in a multidisciplinary journal or a specific academic discipline journal.
3) The journal's editor will send the article to several other scientists working in the same field than the author of the submitted paper (the “peers” of peer review process).
4) The reviewers will provide feedback on the article: key strengths, weaknesses, mistakes, misread results, different opinions and/or comments for improvement, and will give an answer to the editor whether or not they think the study have enough quality to be published on that journal.
5) The authors may then revise their article and resubmit it for consideration even including new experiments required by reviewers if that should happen.
6) Then, the editor will provide a final decision.
This way, scientific published papers are ensured to meet the scientific quality required: acknowledging and built upon previous papers, relying on logical reasoning and properly designed studies, back up claims with evidence, etc. Students will be taught to master those methods. They will be trained on scientific papers comprehensive reading and productive discussion among peers as it is done regularly in science.
Journal Club and Scientific Writing is a mandatory course for students of the second semester of the 3rd year of the Expert in Biotechnological Research Methodology, an UFV-Awarded Title associated with the Biotechnology Degree. This course corresponds to 4 ECTS Credits, which involves 100 hours of student dedication.

GOAL

This subject will train the students, through guided mentorships, on comprehensive reading, analysis, deep understanding, thinking, researching, and developing the skills to effectively communicate, discuss and productively criticize professional scientific literature among peers.

PRIOR KNOWLEDGE

It is recommended that students have a command of a consolidated B2 level of English since the language used in class corresponds to a B2-C1 level according to The Common European Framework of Reference for Languages (CEFR). It will be necessary not only for paper reading and presentation but also for fluid discussion among peers.

COURSE SYLLABUS

SUMMARY:
1. The scientific peer review process.
1.1. How the peer review process works.
1.2. Importance and limitations of peer review process.
1.3. The role of peer review in society.
2. Scientific section based on current journal articles and scientific publications.
2.1. General structure of a research article: IMRAD format.
2.2. How to properly read and discuss a scientific paper.
3. Scientific and communicative English section, focusing on the correct and appropriate language use.
3.1. To enable the student to read and interpret scientific articles in English with focus on specific and pertinent topics.
3.2. To provide students with appropriate tools and techniques necessary to effectively present a topic in English.
3.3. To prepare students for a scientific presentation in public.
3.4. To encourage students for fruitful discussions and constructive criticism based on a scientific journal article.

EDUCATION ACTIVITIES

After the introductory theoretical talks about scientific peer review process in science, students in groups will be assigned to 2 tutors-researchers that will provide them with a scientific article in the field in which they are experts. One of the tutors will provide the article that the students will have to defend as "authors" and the other tutor will provide the article that the students will have to discuss as "reviewers/peers".
The work will consist on:
- Read the assigned published papers individually. Write a brief summary and write down any possible doubt or misunderstanding trying to develop independent learning.
- Working in teams with the rest of the group members for getting a profound understanding of background research, methods, results and analysis of those results.
- Guided-group mentorships held upon appointment with tutors will be mandatory in order to supervise the work done by the students, solve their doubts and guide them throughout that process.
- Group presentation (scientific paper): students will design, prepare and present in class the selected article (as "authors") that will be discussed by the ones assigned that paper as "reviewers/peers" to encourage a fruitful and productive discussion among them all. Tutors will attend presentations of their assigned students in order to supervise, guide and evaluate the group and individual performance.

DISTRIBUTION OF WORK TIME

CLASSROOM-BASED ACTIVITY	INDEPENDENT STUDY/OUT-OF-CLASSROOM ACTIVITY
40 hours	60 hours
LECTURES	LMS (LEARNING MANAGEMENT SYSTEM)

WORKSHOP MENTORSHIPS GROUP PRESENTATIONS AND EVALUATION	ACTIVITIES SELF STUDY GROUP WORK

SKILLS

•To learn strategies to read a scientific article.

• To acquire the ability of analytic, synthetic, reflective and critical thinking.

• To develop habits of oral and written communication in English.

• To constructively criticize, argue among peers and suggest methods for further improvement of a particular research article.

• To understand the peer review process and its relevance in science and in society.

• Training students as future professionals and citizens to have a critical awareness about any scientific information.

• To develop planning strategies and create evidences of meetings

LEARNING RESULTS

• To read scientific texts in a comprehensive and independent manner.

• To reflect, analyze, discuss among peers and give opinions in English from reading and reviewing extracts belonging to scientific texts and press articles

• To use proper English language grammar and vocabulary in all sort of communication situations, particularly in academic and scientific scenarios.

• To know how scientific communication works through peer review process and its importance as future scientists

• To learn how to distinguish scientifically verified sources of information and appraise conflicting scientific results

• To know how to write minutes of the group and tutor meetings

LEARNING APPRAISAL SYSTEM

LEARNING ASSESSMENT SYSTEM
The testing modality used is the continuous assessment. It is the result of a continuous monitoring of the work performed and knowledge acquisition. It is aimed to verify the student's progress in this course. To achieve this, the procedures and techniques used will include guided mentorships with paper discussions in preparation for the final group oral presentation as well as the presentation of the chosen article.
Tools and techniques for evaluation:
a. Techniques:
•Oral presentation and guided mentorships.
•Group dynamics: discussion.
b. Instruments:
•Compulsory mentorships.
•Written and oral final presentation.
•Participation.
CONTINUOUS ASSESSMENT:
To pass the course upon a continuous assessment, students will be granted the following percentages:
Tutor guided-mentorships: 30%
- Regular teamwork meetings (attendance)
- Article preparation
- Positive attitude and participation
Final Presentation Project: 35%
- Oral Presentation of an article
Proactive defense and peer-review: 35%
- Public discussion (defense and review)
FINAL SCORE: 100%
CASES INVOLVING THE APPROVED BY CONTINUOUS ASSESSMENT:
1. Plagiarism on papers and projects.
Provided that plagiarism of any individual or group work, project, etc, might occur, the student will be disciplined in accordance with the Assessment and Behavioral Rules ("Normativa de Evaluación y Convivencia") established by the University.
2. Deadline work and oral presentations.
The dates on which students will have to submit papers or both individual and group presentations, will be fixed by the professor at the beginning of the course. Once this date is past due, no assignments will be collected unless justified reasons for the delay are properly provided. ATTENDANCE TO GROUP-GUIDED MENTORSHIPS AND TO THE ORAL PRESENTATION AND PUBLIC DEFENSE AND DISCUSSION (JOURNAL CLUB DAY) IS MANDATORY.
3. Delivering documents.
•Students who miss class for a legitimate reason have the obligation to provide a proof of it (a doctor's note, i.e.).
•These documents will be submitted on the day after the non attendance and the teacher (or tutor) will have to be notified in advance, if possible.
•Unless these document are provided in time, they will not be taken and will be a reason to fail the subject (remember, attendance to group-guided mentorships and journal club day is mandatory).
4. Honors.
Honors are granted only to those students who stand out above peers, not only with regard to their academic performance in the subject, but also with regard to their attitude and interest against the study and the attitude, commitment, teamwork, along the course.
To award the highest mark to top students, the following task is proposed: he/she will have to record a brief video explaining his paper assigned as "author" highlighting its relevance. This video will be reviewed and assesed by the corresponding lecturer and the subject coordinator who will select who will be granted with honors.
5. Extraordinary assessment.
In case a student fails the subject because of his/her absence to a mentorship, he/she will have to retake that mentorship (either author, reviewer one or both) to check his/her understanding and discussion of the paper with the tutor (or both tutors).
In case the failure is because of the absence to the journal club day or his/her improvable performance, he/she will have to present and discuss the paper with his/her corresponding mentors in order to check improved skills.
WORKERS AND REPEATERS
If a student works part-time or full-time or is a repeater student therefore not being able to attend class regularly, it is up to his/her responsibility to inform the professor of this situation at the course start and submit a proof of work in accordance to the professor's rules. It is the student's responsibility to contact the course teacher for guidelines on his/her final evaluation.

BIBLIOGRAPHY AND OTHER RESOURCES

Basic

Michael Hochberg An Editor's Guide to Writing and Publishing Science Published by Oxford University Press, 2019
ISBN 10: 0198804792 ISBN 13: 9780198804796

Additional

Kate L. Turabian, Joseph M. Williams, Wayne C. Booth A Manual for Writers of Research Papers, Theses, and Dissertations. Chicago Style for Students and Researchers (Chicago Guides to Writing, Editing, and Publishing) Ninth Edition: University of Chicago Press
ISBN-10: 022643057X. ISBN-13: 978-0226430577.

Hofmann, A. H. Writing in the Biological Sciences: A Comprehensive Guide to Scientific Communication 3th (2018). Publisher: Oxford University Press
ISBN 10: 0190852194. ISBN 13: 9780190852191