

Science Dissemination and Communication (C004287)

Course size *(nominal values; actual values may depend on programme)*

Credits 3.0 **Study time 75 h** **Contact hrs** 24.0h

Course offerings in academic year 2022-2023

A (semester 1) English Gent

Lecturers in academic year 2022-2023

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Offered in the following programmes in 2022-2023

	crdts	offering
International Master of Science in Marine Biological Resources	3	A

Teaching languages

English

Keywords

Scientific dissemination; project proposal; social media; broadcasting; infographics; gamification.

Position of the course

Contents

Period 1 (two hours): Overview of dissemination in scientific research: who requires it and why?

This period will include a discussion of the role that public dissemination of scientific research plays in today's society; and Work packages and mandates by the European Commission.

Period 2 (two hours): Project preparation and classic dissemination. Scientists and the communication with their peers: strengths and weaknesses in conference participation. This period includes a discussion of the structure of project applications to different funding bodies (based in developing and developed contexts) as well as the structure of classic submissions for peer-review.

Period 3 (two hours): Taking off the scientist's hat: what types of dissemination are available, and what narratives are being used by scientists? This period includes a discussion of the transformation required by scientists when disseminating research findings to the public; the variety of dissemination types available; contexts in which certain types of dissemination are more appropriate than others; and communication narratives used by scientists.

Period 4 (two hours): Dissemination workshop 1: The classic social networks. This period gives an overview of the most popular social networks, positive and negative aspects, and examples of how scientists use social networks to disseminate research findings and educate the public. The students will be required to engage in an exercise of scientific dissemination using one of the most popular social networks of today, namely Facebook.

Period 5 (two hours): Dissemination workshop 2: Let us play a game (in collaboration with Jacques Bosch, NWU). This period will include an overview of the use of games (board games, video games) in communicating scientific findings and educating the public. The students will be required to exercise their abilities by designing simple games based on allocated resources (budget, materials) to communicate science to the public.

Period 6 (two hours): Dissemination workshop 2 continued.

Period 7 (two hours): Dissemination workshop 3: Broadcasts and Podcasts. This period includes an overview of the characteristics and role of channels, broadcasting and podcasting in scientific dissemination and education. The students will be required to exercise their abilities by preparing audio/video files, which will be uploaded onto a YouTube channel.

Period 8 (two hours): Dissemination workshop 3 continued.

Period 9 (two hours): Dissemination workshop 4: Cartoons and animations. This period includes an overview of the characteristics and role of animation and cartoons in scientific

dissemination and education. The students will be required to exercise their abilities by creating a simple cartoon using publicly available animation software (PowToon Ltd.), and by exporting the cartoon to social network platforms.

Period 10 (two hours): Dissemination workshop 4 continued.

Period 11 (two hours): Dissemination workshop 5: Infographics. This period includes an overview of the characteristics and role of infographics in scientific dissemination and education. The students will be required to exercise their abilities by creating a simple infographic using publicly available animation/infographic software (e.g. Piktochart), and by exporting the final product to social network platforms.

Period 12 (two hours): Dissemination workshop 5 continued, and concluding remarks. This period will provide an overview of the course and address issues that may have emerged during the lectures. The students will be asked to evaluate different types of dissemination based on the lectures and based on their experience during the workshops.

Initial competences

Basic marine biology knowledge, basic knowledge of computer use, basic knowledge of Microsoft Office (PowerPoint).

Final competences

- 1 The understanding of concepts and techniques during the lectures will be evaluated during the exam.
- 2 The lectures will allow the students to acquire the language of scientific dissemination and a good knowledge of public dissemination methods with regard to concepts related to marine biology. In addition, the students will acquire competences related to project structure and organisation, the preparation of manuscripts and the relay of scientific research results at conferences and symposia. In view of the changes imposed by funding schemes of the EU, which expect the use of various forms of scientific dissemination, this course is finalised to provide skills needed for scientific divulgation and project preparation.
- 3 The student will need to acquire a versatile way of communicating his/her knowledge of marine biology to the public, whether children, youth, adults and members of the academic world. During the course, the student will need to apply the principles of divulgation exposed during the lectures, through exercises at the computer and the use of dedicated software. The student will be tested by engaging in exercises of video, infographic, poster, social network pages, small articles and project creation. The results of the exercises will be exposed to the whole class in such a way that will allow the exchange of opinion and evaluations among the students. In conclusion, the student will have to acquire the ability to communicate to different types of audience based on the context and on the purpose of the scientific message to be delivered.
- 4 The exercises in class and the exchange with the lecturers and the students, also through group work and cross-evaluations, can enhance the level of autonomy and judgement and the communication skills of the student. In addition, the exercises can help the student understand the importance of flexible communication in breaking the barriers that often exist between science and the public. The lectures dedicated to project structures will be particularly useful in enhancing the competences of the students in relation to the European directives and the structure of projects funded by the European Union.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Seminar, Lecture

Extra information on the teaching methods

Theory lessons followed by practical workshops in class, addressing various forms of scientific dissemination.

Learning materials and price

All materials will be provided in class, which is a computer room provided with internet access; however, the use of a personal laptop is encouraged to facilitate the work.

References

- Colleton, N., Lakshman, V., Flood, K., Birnbaum, M., Mcmillan, K., & Lin, A. (2016). Concepts and practice in the emerging use of games for marine education and conservation. Aquatic

Conservation: Marine and Freshwater Ecosystems, 26(S2), 213-224.

- Fauville, G., Lantz-Andersson, A., & Sälljö, R. (2014). ICT tools in environmental education: reviewing two newcomers to schools. *Environmental Education Research*, 20(2), 248-283.
- Lucrezi, S., Milanese, M., Danovaro, R., & Cerrano, C. (2017). 'Generation Nemo': motivations, satisfaction and career goals of marine biology students. *Journal of Biological Education*, 1-15.
- McClain, C., & Neeley, L. (2015). A critical evaluation of science outreach via social media: its role and impact on scientists. *F1000Research*, 3.
- McClain, C. R. (2017). Practices and promises of Facebook for science outreach: Becoming a "Nerd of Trust". *PLoS biology*, 15(6), e2002020.
- Parsons, E. C. M., Shiffman, D. S., Darling, E. S., Spillman, N., & Wright, A. J. (2014). How twitter literacy can benefit conservation scientists. *Conservation Biology*, 28(2), 299-301.

More reading material will be suggested in class.

Course content-related study coaching

Available if needed.

Assessment moments

end-of-term and continuous assessment

Examination methods in case of periodic assessment during the first examination period

Written examination, Oral examination

Examination methods in case of periodic assessment during the second examination period

Written examination, Oral examination

Examination methods in case of permanent assessment

Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible

Extra information on the examination methods

The exam consists of a written or oral exam and the submission of a dissemination workpiece (e.g. poster or info-graphic). The written or oral exam is composed of three main sections, each containing two or three questions. The exam will be considered passed when the student has been able to correctly answer at least one question per section (final mark equal to or exceeding 15/30). The dissemination workpiece will be selected by the student out of all workpieces prepared during the course and submitted to the examiner before the written exam, at the end of the course. The student will have passed the workpiece evaluation if this workpiece has been created following the main guidelines provided during the class workshops.

During the written or oral exam, the understanding of key elements of scientific dissemination and project structure will be evaluated. The evaluation of the dissemination workpiece will be based on the ability of the student to adapt a scientific message to the type of audience and to the purpose of the message itself.

Calculation of the examination mark

The final mark will be given out of 30. The exam will be considered passed when the final mark exceeds or is equal to 18. Students may receive up to 30 marks cum laude.

The final mark will be given based on the written or oral exam and the dissemination workpiece. Cum laude will be assigned when the student has demonstrated the full mastering of the subject.