Guidelines for instructors DILAN Online Science Communication: Foundational Principles and Strategies (4-week course)

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This document outlines some important issues to keep in mind for instructors who will be teaching and/or piloting the DILAN Online Science Communication: Foundational Principles and Strategies (4-week course).

All instructors need to familiarize themselves with Moodle, the learning platform. A set of guidelines has been developed specifically for this purpose. Those guidelines focus more on the platform's functionality and technical issues surrounding the platform than on the course content.

It is possible to complement the 4-week course with activities from the DILAN MOOC. The MOOC is intended to be entirely self-directed, so no instructor guidelines have been developed. The MOOC and 4-week course may be offered completely separately or combined as is best suited to the local context. For example, some institutions might want to refer the participants in the 4-week course to certain exercises in the MOOC.

We also realize that different disciplinary and national environments might require specific adjustments to align with local expectations and needs. If you need to make adjustments or adapt the courses in ways that we have not described here, please feel free to do so!

Course description

Online Science Communication: Foundational Principles and Strategies (4-week course)

This asynchronous online course is designed to help researchers gain essential knowledge and skills for effective science communication online. The course focuses on principles and strategies for successful communication to diverse audiences. It is structured into four one-week modules, featuring video lectures, writing tasks, peer feedback, and reflection exercises to solidify understanding. The course culminates in the development of an online science communication project tailored to each participant's professional goals. By the end of the course, learners will have a foundational framework and the initial stages of a project relevant to their work.

Specifically, the course goals are:

- Help participants acquire basic knowledge about elements and conditions of effective online science communication
- Equip participants with the basic skills to successfully communicate science to different audiences in digital environments
- Support participants in the initial stages of developing a digital science communication project relevant to their work and professional goals

The workload is estimated at about 2-3 hours per week.

Description of course structure, with learning materials and tasks in each module:

The Moodle platform contains the following course elements (note: this inventory might change as the course goes through revisions and adjustments!):

Course introduction

- Welcome video (We suggest that each team record their own welcome message so participants can get a sense of who the instructors they will be working with are. We have included our script and a power point that each team could modify for their context in Appendix 1.)
- Course description and course goals
- Course set-up and how to succeed
- Pre-course self-assessment survey
- The course introduction section also features
    - an announcement area, where instructors can post announcements, deadlines, etc. to the participants
    - a course introductions forum. We suggest you use this forum to ask instructors and participants to introduce themselves in a few sentences (sample in appendix 1)
    - a Q&A area, where participants can post questions about the course and instructors can answer them
    - an additional resources Wiki, where participants can share resources they think may be of use to other learners

Module 1: The Scientific Communication (Rhetorical) Situation

- Module goals and objectives
- 20-minute video: The Communication (Rhetorical) Situation of Online Scientific Communication
- Task: discussion post (200 - 300 words) applying the concepts from the video and reading to their own professional communication context
- Exploring the rhetorical situation of infographics: examples and self-directed tasks (from the MOOC)
- Module wrap-up

Module 2: Genres in Scientific Communication

- Module goals and objectives
- 12-minute video: What Are Genres?
- Task: discussion post (200-300 words) applying the concepts from the video to the participant's own professional context
- 14-minute video: Open Science and Genres for Professional and Public Communication of Science

- Task: discussion post (200-300 words) about genres relevant to the participant's disciplinary and professional context
- Module wrap-up

Module 3: Project Proposal

- Module goals and objectives
- Task: develop a 250-word draft project proposal
- Task: peer review assignment. Read and provide 200 words feedback for another project proposal from a peer in the course
- Task: post a revised version of 250-word project proposal
- Module wrap-up

Module 4: Development of Your Online Science Communication Project Draft

- Module goals and objectives
- Task: draft of an online science communication project
- Task: reflection assignment. 250–300-word text or 3-minute oral audio- or video recording, reflecting on the development of the participant's own project and on at least three other projects by peers in the course
- Resources: a page with open access resources for a selection of genres: infographics, graphical abstracts, blogging, podcasts, social media
- Module wrap-up

Course Wrap-Up

- Course evaluation

Key aspects of the course design and pedagogical implications for instructors

The course focuses on rhetorical principles and strategies, not on specific online science communication genres.

Video lectures and tasks focus on overarching questions of audience and genre, rather on specific genres. The rationale for this is two-fold: 1) It allows for maximum flexibility for the participants who might come in with very diverse communicative needs. 2) It allows for the development of principles and strategies that can be adopted and applied across a range of genres. So even if a participant chooses, for example, to develop a draft of a graphical abstract for their project in the course, they should also be able to apply the principles and strategies to other genres in the future, such as a lay summary or an infographic.

Instructors facilitate participant adoption and operationalization of principles and strategies to their own projects.

It follows from the focus on rhetorical principles and strategies that instructors will not be teaching specific genres (e.g. “how to make graphical abstract”). Instead, the key task for instructors will be to facilitate the participants’ abilities to apply these principles and strategies to their communicative needs. In most cases, the teaching will be less directive (“here is how you make a graphical abstract”) and more focused on guiding the participants in their adoption of and operationalization of these principles and strategies. For example, while checklists of “how to make graphical abstracts” exist, instructors might ask participants “What do you notice about the graphical abstracts in the journal you want to publish in? How do they compare to what you find in the checklist on the resources page? Can you find any patterns that suggest how this genre is understood in this specific discourse community? If so, how can you adopt those patterns in your own work?”

However, if you work in an environment where directive approaches are expected, you could choose to use the resources page in a more directive fashion. For example: “Use the best practices checklist provided on this website for how to make a graphic abstract, to design your own visual abstract.”

Instructors engage with course participants by responding to discussion posts and drafts

The videos in the course provide the main lectures, so instructors will not be expected to prepare or deliver lectures. The teaching in this course will mostly involve facilitating discussion on the discussion boards and responding to posts and questions. The discussion posts are mostly intended to offer participants a chance to apply the content to their own contexts in order to develop a more nuanced understanding of the general principles. It is of course, ideal if the participants discuss with each other, but sometimes this can be difficult to get going. So, while peer-to-peer discussion is strongly encouraged, it is not necessary for the success of the course.

It is, however, important that the participants receive some kind of response to their posts. There are a number of ways that instructors may respond to the posts, and we outline some of them here:

- Brief comments on each post (might be possible if the number of participants is manageable), noting interesting aspects or asking questions
- An overarching comment where instructors comment on several or all of the posts, collectively (noticing trends and/or drawing comparisons between posts). Note that such a comment may be written or made as an audio or video recording
- A mix of overarching comments taking into account several posts and comments on individual posts

The most important function of these comments is to create a sense of community and offer an arena where participants can learn from each other. It is also an arena for sharing resources, tips, challenges, and frustrations. Some tips on how to create a sense of community in an online course can be found here.

Instructors are encouraged to use the resources page in the 4-week course and the MOOC actively to supplement the examples in the course, if needed

In the 4-week course, there is a resources page with curated open-access resources that offer specific instructions and tools for the following genres that instructors might want to familiarize themselves with. These resources are included so instructors may direct participants to these resources for help with the more technical details of specific genres. The resources could also be used as examples and reference points during discussions. If you have any additional resources you would like to add, please feel free to do so either by adding to the resources page, or to the course Wiki, or by posting directly to a discussion forum in the course. Instructors might also want to incorporate certain exercises from the MOOC if they feel participants need more specific examples to develop genre awareness. For example, in Module 1, the tasks about infographics is taken from the MOOC.

There is also a course wiki where participants can be encouraged to add resources they have found helpful.

Instructors need to plan and monitor deadlines

The 4-week course is an asynchronous course which means that participants do the tasks and exercises at their own pace. However, participants need to be enrolled during the same 4-week period, so instructors need to set a start day and an end day for the course, and they also need to set deadlines for when the weekly assignment need to be completed (see more below).

- Before the course:
    - provide participants with start and end-dates for the course, and, if possible key deadline for tasks and assignments (see below)
    - provide participants with information about how to log in
    - provide participants with information about how to navigate moodle
    - ask participants to complete the pre-course self-assessment
    - ask participants to post a brief introduction to the “Class Introductions” forum in the introductory module. Instructors could start by posting their

own introduction as a model/inspiration for participants to use (see appendix 1 for an example)

- During the course:
    - Participants are asked to contribute to discussion boards. Deadlines need to be posted for the discussion posts in each module.
    - Participants are asked to submit and respond to drafts. Deadlines need to be posted for the drafts and assignments in each module.
- After the course:
    - Ask participants to complete course evaluations
    - Provide participants with information about how to receive a course certificate

Please note that while the course is designed to be completed within 4 weeks, it is possible to make local adjustments. For example, some participants might benefit from more time in Module 3 and 4 when they are designing their own projects. In some institutional contexts, it might thus be suitable to schedule Module 1 and 2 as one-week modules, while allowing 2 weeks each for Module 3 and 4. If any such adjustments are made, it is of course important that they are communicated clearly to the participants.

APPENDIX

Script for Welcome Video (see also PPT that each team could adopt and adapt if they would like to):

Welcome to the course! My name is…..and I will be your instructor in this course. *(If you want, you can include a brief biography with credentials, certifications, and years of teaching experience or other information.)*

The purpose of this course is to:

- help you **acquire basic knowledge** about elements and conditions of **effective online science communication**
- help you develop the basic skills to **successfully communicate science to different audience**s in digital environments

- support you in the initial stages of **developing a digital science communication project** relevant to your work and professional goals

This course is designed as an online asynchronous course, which means that you will complete all activities during the time that works best for you. However, note each week, there will be deadlines for completing assignments such as for adding discussion posts or giving peer feedback. The deadlines will be put in the announcement section, as well as in the individual course units. (*Or wherever you think you will post the deadlines)*

To get started in this course you will need to begin by viewing the home page. Begin by getting an overview of the course by reading the "Course set up and how to succeed page". The work for this course is organized in four modules, with one module to be completed each week, so you can browse the modules to see what each contains.

Please also complete the "Pre-Course Self-Assessment Survey" that you can find in the introductory module. The purpose of this survey is to encourage you to critically assess your current level of knowledge and skills related to digital science communication. Understanding your current level of proficiency on the topic will help you learn more effectively and efficiently. It only takes a few minutes to complete.

Finally, it is important for everyone in the class to get to know each other. Please go into the "Class Introductions" forum, then post a new message using your name as the Subject Line and share some information about yourself. If you need a sample, take a look at my introduction, which has already been posted.

If you have any questions or concerns during the course, please let me know. The preferred method for sharing your questions is to post them to the Q&A discussion board in this introductory module. (*Or however you would like students to contact you if they have questions).*

I hope that you will enjoy this course, and I look forward to having you in the class.

SAMPLE introduction post to the Course Introductions forum

> Hello, my name is Kristin (*if you work in an environment where titles and last names are more appropriate, adjust as needed*), and I am an instructor in this course. I work as an associate professor of English for Academic Purposes here at OsloMet. My research interests include doctoral education, doctoral supervision, and doctoral writing, including evolving research communication practices. I look forward to getting to know you and discussing your digital science communication projects with you! 😊

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