Extended Abstract: An Open Syllabus from OE4BW for Teaching the UNESCO Recommendation on Open Science

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In this session, a mentor-mentee pair from the fields of public policy and instructional design will share a project in which they develop an open syllabus for a course introducing the UNESCO Recommendation on Open Science. This project is part of UNESCO’s Open Education for a Better World. Open Education for a Better World (OE4BW) is an international online mentoring program supporting the development and implementation of freely accessible modules and resources for online education on topics with social impact according to the UN Sustainable Development Goals (SDGs).

Geoffrey Cain is an consultant (GBC Education Consulting) who facilitates projects in instructional design, curriculum development, elearning, open pedagogy, OER, and anything else that will help broaden access to education. He is also a former community college instructor in English Composition and Adult Basic Education.

Jennifer M. Miller, PhD, has over 10 years’ experience teaching public policy and management at the undergraduate through doctoral levels. She also researches public policy, with an emphasis on science and technology policy. Currently an independent scholar, she is focused on advancing open knowledge through a variety of projects in open data, open education, and open science.

Developed through an extensive consultation process, UNESCO’s Draft Recommendation on Open Science was published in September, 2020. It emphasized the following elements: development of a common understanding of Open Science, diverse paths to open science, creation of an enabling policy environment, capacity building, infrastructure, scientific culture, incentives, innovations throughout the scientific process, and international cooperation.

A wide range of organizations offered comments on the Draft Recommendation. Input from experts convened in May, 2021 emphasized research quality and integrity; definition, actors and stakeholders of Open Science; the centrality of capacity-building; importance of international solidarity and international collaborations; intellectual property rights; and implementation and monitoring of Open Science. We are building our syllabus around the Draft and expert feedback, and will make minor adjustments as needed when the Final Recommendation is published in November 2021.

By providing a forum to build open science communities, the project supports SDG 17, Partnerships for the Goals.
Open sharing of scientific knowledge will be essential to realize the SDGs. According to the text of SDG 17, “A stronger commitment to partnership and cooperation is needed to achieve the SDGs. Attaining the Goals will require coherent policies, an enabling environment for sustainable development at all levels and by all actors, and a reinvigorated Global Partnership for Sustainable Development.” These policies need to include the sharing of open data and research. By training scientists and researchers in open practices early in their careers, new means of sharing of data and research can be realized.

Existing scientific institutions must adopt open science principles and scientists will need local and disciplinary communities of open practice.

Scientists-in-training must learn open science principles early in their careers. This course is designed primarily for an audience of early-career researchers, ranging from upper-division undergraduates to 7-10 years post-PhD in the sciences, social sciences, and science communication.

The 15-week syllabus was created by adapting the open syllabus template of the Creative Commons Certificate Program. The Creative Commons syllabus template supports our goals, as it was also designed for an audience ranging from students to entry-level professionals to experts. The syllabus includes readings, discussion themes, and rubrics.

The course begins with foundational readings on the role of science in human rights and the SDGs, introduces the UNESCO Recommendation on Open Science as a policy process and document, then leads course participants through exploration of individual principles of open science. The course concludes with synthesis and application of the principles and presentation of final projects.

The open syllabus format invites students and course leaders to add domain-specific examples. In addition to teaching a conceptual understanding of the principles, the course will guide students to recognize the principles within their own research context and to form communities around the principles of open science. For example, if the course were offered by the University of Washington’s College of the Environment, the syllabus could be adapted to emphasize how open science contributes to SDG 13, Climate Action. If the course were offered by the University of North Carolina’s Gillings School of Global Public Health, it could emphasize open science’s contribution to SDG 3, Good Health and Wellbeing.

The course is ideally suited to build a local open science community within a lab, school, or department, or within a subject-matter community that spans the globe. However, the open syllabus format lends itself to adaptation for synchronous, asynchronous, and hybrid formats.

The presenters are seeking partners to teach or co-teach courses based on the syllabus starting in Spring 2022, following the Recommendation’s anticipated adoption by the General Conference at its 41st session in November 2021. Potential partners are welcome to contact the presenters before, during, or after the conference for details and logistics of course adoption.