ONLINE COURSE:
“GOOD CHEMISTRY - METHODOLOGICAL, ETHICAL, AND SOCIAL DIMENSIONS”

ECC7, GENERAL ASSEMBLY, LIVERPOOL
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EuChemS Working Party on Ethics in Chemistry
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What is the goal?

„Sustainable education of chemistry students as our future scientists and researchers“

Goals:

- Good Scientific Practice, Scientific Integrity;
- Responsible professional conduct in academia, industry, or public service;
- Awareness of dual-use potentials and how to deal with it;
- Improving discourse skills.

Therefore, a proper course needs sections on:

- Scientific methodology;
- Research ethics;
- Social impact of chemistry.
Knowledge and awareness of the normative dimensions of chemistry pays off in the form of:

- Professional skill and competence
- Credibility
- Societal support
- Sustainable progress
- Economic benefit
Course Design

- Online Course, provided via e-learning platform Moodle
- Target group: Master (final year) and PhD (early phase) students.

16 classes:
- 45-60 min. video lecture;
- Pre-assessment questions, warm-up reflections;
- Chemical cases (historical, fictional);
- Reading and discussion assignments;
- Workshops and forums;
- Quizzes (test questions for assessment of learning outcome).

- Estimated workload per class: 2-3 hours

Great organisational flexibility:
- Entire course = 2 ECTS; selection of 8-10 classes = 1 ECTS
- Local instructors manage and adapt the course content on Moodle, or combine it with on-site (face-to-face) classes.
Example

Class 10 - Sustainability

01 - Warm-up: My own research project and sustainability
02 - Reading assignment: Sustainable and Green Chemistry (Albini, Protti)
03, 05, 07 - Video class: 10 - Sustainability
03, 05, 07 - Lecture Script
04 - Background information: Chemical Leasing
06 - Reading Material: REACH and Sustainability (ECHA report 2017)
08 - Discussion forum: Chemistry & Sustainability
09 - Quiz

Summary of content
With this class, we start another section of this course: The impact of chemistry onto society and the environment. Here, the normative framework in the form of an ethos of science that has been used by those in the natural sciences to justify their activities is discussed.
Course Objectives

- Understanding basic science theory and applying it in daily research activity,
- Increasing knowledge on theory, conduct and communication of chemical science,
- Applying ethics to *scientific practice* and *science assessment*,
- Learning concepts of *responsibility* and *sustainability* in the context of chemistry,
- Acquiring skills for interdisciplinary normative discourse.
THANK YOU FOR YOUR INTEREST AND ATTENTION!