Annex 1: Brief description of the programmes

HEIRRI

Higher Education Institutions
& Responsible Research and Innovation

Doing and Experiencing Dialogical Reflection on Research and Innovation

Overview

Audience	Master's students
Year of study	Second year of master's studies
Number of ECTS credits	3.0 ECTS credits (workload of 75 to 90 hours)

Introduction

In the process of becoming professionals in their domain, students develop a specialist's view on the processes and output in their field. Students focus on certain topics and are supposed to become experts on them. Although this specialisation is indeed necessary to succeed as a professional in for example research and innovation, students run the risk of losing a critical view on their own work. They might get absorbed by "their" topic, by "their" specific field of interest, and might lose the anchorage in the wider society by moving in a bubble of journal articles and academic discourses. Thus, they might not only face challenges and unintended effects when their findings and developments are (not) taken up by society or certain groups, but they also might lose valuable input which could improve their own work in the first place.

To counter this possible effect, the interactive course "Doing and Experiencing Dialogical Reflection on Research and Innovation" encourages and empowers students to enter a mutual dialogue with others on research and innovation (R&I) activities and developments. In this course, students will train how to consider societal perspectives in R&I by the means of dialogue activities. It equips students with knowledge and skills to promote and facilitate such discussion and reflection processes and gives them the opportunity to be part of such activities. It is open for master's students with different disciplinary backgrounds.

Students will have the opportunity to experience both sides of deliberation activities. They will get to know and discuss different methods to facilitate dialogues on R&I and related developments. In groups they will prepare and conduct presentations on different related methods suggested by the course instructor. Groups of students supervised by the course instructor will design and implement a dialogue "experiment"

in which their fellow students will participate. Thus, each student will be on both sides, on that of a facilitator and that of a participant. They will have to face and solve challenges such engagement entails but will also experience its great opportunities and insights. They will document the results in a written report and reflect on their own participation in a short essay.

On completion of this course students will be able to (learning outcomes – LO)

1. explain methods to facilitate dialogue and discussions on research and innovation (R&I) with different societal actors;
2. adapt a dialogue approach to facilitate dialogue on a specific R&I process or development;
3. carry out a dialogue activity to discuss a specific R&I process or development and analyse the participants' different perspectives on and assessment of the R&I issue under debate;
4. and to reflect on the quality of the dialogue and interaction facilitated through a dialogue activity.

**Higher Education Institutions
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Enhance your Thesis

Overview

Audience	Master's students
Year of study	Second year of master's studies
Number of ECTS credits	2.0 ECTS credits (workload of 50 to 60 hours)

Introduction

The master's thesis constitutes the central output of students' research efforts in many master's programmes of higher education institutions (HEI) in Europe. In working on their theses, students have to deal with tasks typically for a research project. They have to find interesting and appropriate topics, formulate research questions, set up a design for their empirical work or define their frame for theoretical deliberations, conduct the planned work, write down their findings, and present and defend their theses.

In this tight and demanding process, it is sometimes hard to hold on for a moment and reflect on aspects beyond the "core" scientific tasks and development steps. There is often lack of time and space or even lack of awareness for the importance of looking inward, talking to others, and reflecting on the significance and the wider implications of one's own work. To ask if and how the own work might be of importance, how others could benefit or how to prevent any potential harm deriving from it, how to conduct the project in line with societal and scientific norms and values, etc. often needs to be missed out. In short: While students learn how to do research "the proper" way in terms of correctly applying research methods, how to do it in a "responsible" way in general is often not addressed.

The training programme "Enhance your Thesis" aims to encourage students to engage in a reflection process on the implications of their own work going beyond the realm of their discipline in particular and of science in general. Its main target group are master's students of all disciplines who already have preliminary topics for their theses but have not yet started to work on them in depth. Students who already work on their thesis projects are eligible participants too, but the course then might not have the desired impact. Students participating in this course will develop a broader understanding of the societal embeddedness of research and innovation in different

societal contexts and will be encouraged to apply such a perspective on the work for their own theses.

In this course, different concepts of Responsible Research and Innovation (RRI) will serve as reference points to question and reflect upon the thesis work of the students. Students will engage in discussions on and further investigate RRI aspects of their theses, present their findings to their colleagues, and elaborate on them in a short paper. If the given institutional and programme context allows to do so, it is desirable that the work done in this course has an impact on the students' theses (e.g. on the research questions, the design, or the implementation). At least one contribution to the student's theses should be an added chapter outlining the insights gained from the reflection and discussion activities.

On completion of the course students will be able to (learning outcomes – LO)

1. apply concepts of RRI to discuss research and innovation (R&I) processes and their outputs;
2. assess possible societal implications and impacts of concrete research activities;
3. acknowledge and react constructively to suggestions from their peers regarding their own research work;
4. and to propose adaptations to better align a research project with societal needs, values, and expectations.

Although this course primarily focuses master's students, this course is also suitable for prospective or active PhD students before starting with or at the beginning of their dissertation project.

Responsible PhD:
RRI and PhD Research Projects

Overview

Audience	PhD students
Year of study	Beginning of PhD research project
Number of ECTS credits	1.0 ECTS credit (workload of 25 to 30 hours)

Introduction

PhD candidates are expected to do original research and contribute to the knowledge in their respective field. For most students, it is the first time to do research that extends the boundaries of knowledge and to produce new insights into a specific issue or further push a technological development. In this process, questions of how to organise a research process in the right or responsible way may arise. How to do research that does not harm? How to produce findings that are socially robust? To deliberate on these and further questions, concepts of Responsible Research and Innovation (RRI) provide a means to reflect on and analyse different aspects of research processes and show how to steer them towards being more responsible and open to societal needs, values, and demands.

This training programme introduces PhD students to Responsible Research and Innovation and facilitates reflection and discussion about how responsibility can be understood and practiced in academic research. Students will first discuss different concepts of and approaches towards RRI and apply them to a concrete research and innovation (R&I) case example. Then, participants will look at their own research project from an RRI perspective and will think about and propose how to practically consider and apply RRI in this context.

The target audience of this programme are PhD students at the beginning of their studies as well as other early career researchers. The course should be implemented with about fifteen participants. It demands a high level of active participation in all parts and preparatory work in advance of the course. Students have to actively engage in discussions and group exercises, complete reading assignments, hold a presentation, and write an essay. It is possible to also integrate a public engagement activity, which makes the course more interactive and comprehensive, but at the same time more

demanding in terms of resources (see **¡Error! No se encuentra el origen de la referencia.**).

On completion of this course students will be able to (learning outcomes – LO)

1. analyse and discuss the main characteristics of different concepts of Responsible Research and Innovation (RRI) and their implications for research practices;
2. apply different concepts of RRI to identify possible ways to make concrete R&I processes more responsible;
3. and to identify possibilities to make their own research projects both on the procedural and outcome level more responsible.

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Higher Education Institutions & Responsible Research and Innovation

Facilitating Reflection on Responsible Research and Innovation

Overview

Audience	Academic and non-academic HEI staff
Year of study	–
Number of ECTS credits	No ECTS credits awarded. Workload of approximately 25 to 30 hours.

Introduction

The HEIRRI project aims to promote the integration of Responsible Research and Innovation (RRI) into higher education. In the process of developing courses for training students to reflect on and practice RRI, it became obvious that although many issues related to concepts of RRI (e.g. research integrity, open access, or gender equality) have been discussed and taught in higher education settings, teachers are often not yet familiar with concepts of RRI themselves. They acknowledge the importance of steering research and innovation (R&I) processes towards RRI, but are not sure how this could be done, e.g. in terms of teaching RRI. In order to be able to teach RRI and use the HEIRRI training programmes, it is necessary to initiate a learning and reflection process on the behalf of the teachers (and other higher education actors) first.

This one-day in-service training workshop addresses this issue and proposes a way to support higher education teachers and other actors in higher education institutions (HEI) who want to promote RRI in their institution. It aims to facilitate reflection on issues of RRI among the participants of the workshop as well as to make them aware of how to facilitate reflection on RRI on behalf of their students in their own teaching activities.

Dealing with concrete case examples provided, participants will inquire and discuss the wider societal impacts of R&I processes, and will thus also deliberate on how these could be done more responsibly. Participants will get to know concepts of RRI and discuss their value in re-thinking the science–society relationship, in changing the ways of doing R&I, and in teaching students in higher education.

Higher Education Institutions
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In the development process of the HEIRRI training programmes, involved actors from higher education institutions often remarked that they want to promote RRI or related issues in their institution or study programme, but that it is often hard to find allies in this regard. Entrepreneurs of research ethics, gender equality, open access, or other RRI-related issues sometimes feel isolated or not well connected within their institution and do not know from or work with each other. Through taking part in the workshop, they have the opportunity to get to know others working on or interested in pursuing similar aims in higher education training. Thus, it is also a valuable opportunity to initiate collaboration, e.g. setting up a course on RRI together.

On completion of this workshop participants will be able to (learning outcomes – LO)

1. apply concepts of Responsible Research and Innovation (RRI) to discuss the societal implications of research and innovation (R&I) developments;
2. and to outline how to promote reflection on RRI and related issues in higher education settings.

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**Higher Education Institutions
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Considering Responsible Research and Innovation by Design

Overview

Audience	Master's and PhD students, R&I actors and other stakeholders
Year of study	–
Number of ECTS credits	2.0 ECTS credits (workload of 50 to 60 hours)

Introduction

The requirements for research and innovation (R&I) to consider societal aspects of their work and developments have been increasing in the last decades. The approach of Responsible Research and Innovation (RRI), which does not only include aspects such as gender equality, ethics, or open access, but also wants to better align R&I with societal values and demands in general, is a cross-cutting issue in the European Commission's funding programme Horizon 2020. However, there are different uptakes of what "responsible" research or "responsible" innovation is and these are often contested. Furthermore, requirements linked to a certain definition of responsibility are sometimes conflicting with demands and necessities within scientific domains. In the end, it is often difficult to put concepts of RRI into practice and turn them into a concrete research or innovation project.

The interactive five-day summer school brings together different participants, and encourages and supports them finding ways to consider issues of RRI in concrete projects. Participants have to identify ideas for research projects incorporating principles of RRI, work together by using various interactive methods, and further develop their ideas into a project proposal. Finally, they will present their findings to their colleagues in an appropriate and enthralling way and write a short reflection paper on their experiences and insights. This summer school is an intense and demanding programme, but it is also an inspiring way to deal with RRI with respect to concrete research activities. It is a possibility for different groups of people to engage with each other in deliberating on RRI. Possible participant groups include but are not limited to PhD students, researchers, research administration and funding actors, and actors from civil society with relations to different fields of R&I.

The summer school is mainly based on the independent and autonomous group work of participants. The course instructor facilitates discussions and guides the participants through the different stages of the summer school. Participants are free to choose the specific topic as well as the format in which they present their findings. They are encouraged to find creative means of expression, including video, graphics, music, performance, etc., but are also free to conduct a traditional oral presentation using slides. Participants will have to complete reading assignments on RRI in advance of the course in order to have similar background knowledge.

On completion of this summer school participants will be able to (learning outcomes – LO)

1. apply key dimensions of Responsible Research and Innovation (RRI) considering concrete research activities;
2. design a multidisciplinary research project incorporating ideas of RRI;
3. share and discuss ideas on the implementation of RRI with others in a distended context;
4. and to present project proposals in an easily comprehensible and creative manner.