**Template for PhD project description**

This template has been approved by the PhD committee at the Department of Physics (FI). All PhD project descriptions should adhere to the template, effective from 1 May 2020.

The PhD thesis is an independent, scientific work that meets international standards regarding academic level, method, and ethical requirements.

The PhD programme at the Faculty is a supervised study requiring a project description for admission to the PhD programme. The project description is a joint proposal to be approved by the PhD candidate and the supervisors. By signing the application for admission to the PhD programme, the doctoral candidate and supervisors also approve the content of this project description.

The main purpose of the project description is to ensure that the project has scientific relevance, a suitable workload for the project period and clear milestones. The project description should be detailed enough for the PhD Committee at FI and the MN Faculty to assess research goals, scientific challenges, incremental milestones and publication plan. It also forms the baseline for the third semester evaluation and any later evaluations.

The project description should be between 4 – 10 pages, and should contain the following elements:

**1. Project title**

**2. Main objective and summary of the project**. Present the main objective and a brief summary, explaining how you intend to attain your goal.

**3. Project background and scientific basis**. Provide a brief survey of existing research efforts and scientific basis, with references to scientific literature.

**4. Research questions and scientific challenges.** Outline your research questions and scientific challenges, both for the broader thesis and, where applicable, for each planned publication. Explain their scientific foundation and your general approach to address them. Describe your ambitions of reaching beyond the state-of-the-art. If your project is a part of a larger research effort requiring coordination, explain specifically your planned contributions within the larger framework.

**5. Scientific method.** Outline your method for reaching your scientific goals. Describe how you are planning to use empirical, analytical or other methods for your research. Please state how these methods relate to the expected scientific contributions of the thesis. If applicable, describe the source of your data.

**6. Expected impact.** The description should address the potential impact of your research on

1. your field of science
2. methodology
3. environment
4. society

If your project does not have any significant impact on one or more of the points B-D above, it is sufficient to briefly state this~~.~~

**7. Ethics.** Contemplate about the attached check-list of potential ethical concerns identified by the European Research Council. If you answered at least one of the points with ‘yes’, describe any ethical challenges related to your research and (potential) ethical issues of the impact of the results of your research on the society (cf. also the research-ethical guidelines of the Norwegian Research Ethical Committees1,2); check if your project requires notification to the Data Protection Official for Research3. Candidates doing fieldwork abroad should check if they also have to register their project with the applicable authorities there and if the collected material is intended for molecular work follow the requirements of the Nagoya protocol4.

If the project does not have any foreseeable ethical challenges this should also be stated.

**8. Project timeline.** The project timeline will be used in connection with the third semester evaluation and must include verifiable milestones. Outline a research plan for EACH semester including (for example)

* course-work
* scientific contributions
* planned publications (preferably indicate publication channel(s) as well)
* mandatory/teaching duties (25%; when applicable)
* planned visits to other research institutions (national or international; when applicable).
* etc.

**9. Project organisation and cooperation.** The principal supervisor should provide an overview of knowledge / expertise each supervisor will contribute, how they collectively cover the academic field of the project, and how the members of the supervisory team will cooperate. Finally, the robustness of the research group is to be addressed; i.e., how other academic staff and their PhD candidates and PhD projects support the new project and how the new project fits into the ongoing research activity at the Department of Physics. Please provide motivation for the association of the project to the Department of Physics, in case this is not already obvious from the project description (i.e. points 3-5 above).

**10. Cooperation with external parties.** Some projects have significant contributions from non-UiO partners, like partial external supervision of the PhD candidate, or part-time employment of the candidate by an external partner. For each external partner, the required standard agreement concerning the completion of PhD education in cooperation with an external party has to be signed by the external party and UiO, and submitted as part of the PhD application. The agreement includes a list of specific contributions committed by the external party. The project description may contain further details about the planned cooperation, e.g., potential for innovation for the external party.

**11. Literature references.**

1[The guidelines of the National Committee for Research Ethics in Science and Technology](https://www.forskningsetikk.no/en/guidelines/science-and-technology/guidelines-for-research-ethics-in-science-and-technology/).

2[A guide to Internet Research Ethics](https://www.forskningsetikk.no/en/guidelines/social-sciences-humanities-law-and-theology/a-guide-to-internet-research-ethics/).

3[Data Protection Official for Research](https://sikt.no/en/home).

4[About the Nagoya Protocol](https://www.cbd.int/abs/about/)..

**Appendix: Checklist of potential ethical concerns for the PhD project**

This list is inspired by the Ethics list that is provided by the European Research Council grant applications. Please go through the list, and if any of the issues raised apply to your project, describe those and the necessary actions under element 7: Ethics in the project description.

1. HUMAN EMBRYOS/FOETUSES

* Does your research involve Human Embryonic Stem Cells (hESCs)?
* Does your research involve the use of human embryos?
* Does your research involve the use of human foetal tissues / cells?

2. HUMANS

* Does your research involve human participants?
* Does your research involve physical interventions on the study participants?

3. HUMAN CELLS / TISSUES

* Does your research involve human cells or tissues (other than from Human Embryos/ Foetuses, i.e. section 1)?

4. PERSONAL DATA

* Does your research involve personal data collection and/or processing?
* Does your research involve further processing of previously collected personal data (secondary use)?

5. ANIMALS

* Does your research involve animals?

6. THIRD COUNTRIES

* In case non-EU/EEC countries are involved, do the research related activities undertaken in these countries raise potential ethics issues?
* Do you plan to use local resources (e.g. animal and/or human tissue samples, genetic material, live animals, human remains, materials of historical value, endangered fauna or flora samples, etc.)?
* Do you plan to import any material - including personal data - from non-EU/EEC countries into the EU/EEC?
* Do you plan to export any material - including personal data - from the EU/EEC to non-EU/EEC countries?
* In case your research involves low and/or lower middle income countries, are any benefits-sharing actions planned?
* Could the situation in the country put the individuals taking part in the research at risk?

7. ENVIRONMENT & HEALTH and SAFETY

* Does your research involve the use of elements that may cause harm to the environment, to animals or plants?
* Does your research deal with endangered fauna and/or flora and/or protected areas?
* Does your research involve the use of elements that may cause harm to humans, including research staff?

8. DUAL USE

* Does your research involve dual-use items in the sense of Regulation 428/2009, or other items for which an authorisation is required?5

9. EXCLUSIVE FOCUS ON CIVIL APPLICATIONS

* Could your research raise concerns regarding the exclusive focus on civil applications?

10. MISUSE

* Does your research have the potential for misuse of research results?

11. OTHER ETHICS ISSUES

* Are there any other ethics issues that should be taken into consideration? If so, please specify in the project description.

5This point concerns research involving goods, software and technologies covered by the EU Export Control Regulation No 482/2009. These dual-use items are normally used for civilian purposes but may have military applications, or may contribute to the proliferation of weapons of mass destruction. Link to EU Export Control Regulation No 482/2009:

<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1399888895034&uri=CELEX:02009R0428-20120615>.