

The description of the research project should normally be between 4 to 6 pages with normal layout and continuous text. The project description is to be a living document throughout the PhD agreement period, and to be annually reviewed in collaboration with your supervisors. Please do also get familiar with the National Qualification Framework for PhD (NOKUT).

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## **DESCRIPTION OF THE RESEARCH PROJECT – CONTENT**

Guidelines for the description of the research project at the IE Faculty. The description should contain the following items:

### **Background**

- Give a brief description of the approach and issues that will be addressed in the doctoral thesis.
- Why is the proposed thesis subject of interest in view of the current state of the art?
- New knowledge that is expected to result from the research work on the thesis should be outlined relative to the state of the art within this field and the candidate's previous work within that field.

### **Objectives**

- The *academic or scientific* objectives of the PhD thesis work are to be specified.
- The objectives are to be listed in points and formulated in a way that enables them to be examined and evaluated once the research is concluded.
- Reflect briefly on the NOKUT requirements on learning outcomes, i.e.: Knowledge, skills and general competence (listed at the end of this document).

### **Scope**

- Consider the limitations in the coverage and explain which topics are to be covered by the thesis and which issues are outside the scope of the work.

### **Research method**

- The research content of the PhD thesis is to be specified.
- Describe the specific research methods that will be used to achieve the objectives listed under point two above.
- If relevant:
  - experimental data is to be collected, describe the research design and data analysis that will be used.
- Assess the need for data management plan and/or plan for management of code. If relevant include brief summaries of the plan(s) or include establishing these as part of the work plan.
- Describe briefly how the project will align with open science (open access, open data and open source) and possible relevant restrictions related to e.g. sensitive data, patents or export control.

### **Expected results**

- The potential new knowledge that could result from the research is to be explained.
- Show how the findings and results from the thesis can be applied in an industrial context or be useful to other sectors such as public administration.

### **Ethical reflections**

- Give a comprehensive reflection on ethical issues related to your research.
  - Useful resource: Introductory online research ethics course (approximately 1 hour). The faculty expect that all PhD candidates take the course at the start of their research education and ahead of applying for admission. In their application for admission, the PhD candidates shall reflect on research ethics issues regarding their proposed research work.
    - <https://studntnu.sharepoint.com/sites/kurs/Sider/Research-ethics.aspx>
    - (Those without access to NTNU's systems can follow this link: <https://s.ntnu.no/research-ethics-introduction>)

### **Sustainability**

- Give a comprehensive reflection on sustainability issues related to your research: Impact of research results on sustainability at a larger scale (world resources), reflection regarding impact pro/cons of research field and, if applicable, impact of resulting applications/implementations/realizations from a sustainability point of view. The reflection should be based on relevant/applicable UN sustainability goals.
- If applicable, sustainability could/should also be reflected on in relation to ethical considerations (for example: is the research ethical at a larger scale? Is it responsible to work on this if sustainability is a global constraint on research in a short/long term perspective?)

#### Relevant resources:

- Link to sustainable development goals: <https://sdgs.un.org/goals>
- Link to IE sustainability strategy (preliminary file): [https://www.idi.ntnu.no/intra/about/orgdocs/strategi\\_barekraft.pdf](https://www.idi.ntnu.no/intra/about/orgdocs/strategi_barekraft.pdf)
- Link to main definition of sustainability according to IE's strategy: three ethical dimensions of sustainable development: ensure social justice, ensure human needs, and respect environmental limits (source: Holden, E., Linnerud, K., and Banister, D. 2017. "The Imperatives of Sustainable Development," Sustainable Development (25:3), pp. 213–226. (<https://doi.org/10.1002/sd.1647>)).

### **Work plan/work schedule**

- State the tasks that will be performed in order to achieve the stated objectives.
- A schedule that shows the time required for each of the tasks in the work plan should be included.

### **References**

- The references used to describe the background and current state of the art should be included.

### **Learning outcome descriptors**

A candidate who has completed his or her qualification should have the following learning outcomes defined in terms of knowledge, skills and general competence.

#### **Knowledge**

*The candidate ...*

– is in the forefront of knowledge within his/her academic field and masters the field's philosophy of

science and/or artistic issues and methods  
– can evaluate the expediency and application of different methods and processes in research and scholarly and/or artistic development projects  
– can contribute to the

development of new knowledge, new theories, methods, interpretations and forms of documentation in the field

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**Skills***The candidate ...*

- can formulate problems, plan and carry out research and scholarly and/or artistic development work
- can carry out research and scholarly and/or artistic research work of a high international standard
- can handle complex academic issues and challenge established knowledge and practice in the field

**General competence***The candidate ...*

- can identify new relevant ethical issues and carry out his/her research with scholarly integrity
- can manage complex interdisciplinary assignments and projects
- can communicate research and development work through recognized Norwegian and international channels
- can participate in debates in the field in international forums
- can assess the need for, initiate and practice innovation