PhD research plan

Purpose and requirements

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Procedure

• An outline at admission
• Detailed required after 6 months
• Template provided
• The process important
• Collaborate with supervisor, but:
• **YOU should be in charge**
Outline of research project

• Background
• Objectives
• Scope
• Research methods

• Expected results
• Work plan
• References
Plan 2 thesis

1. Preliminary plan
   START
2. Research plan
   6 MONTHS
3. Mid-study evaluation
   18 MONTHS
4. PhD thesis
   36 MONTHS
Background

• What topics and challenges will be addressed?
• Why is the topic of relevance/interest?
• Describe state of the art
• Position your planned work relative to state of the art
• What are the expected new knowledge?
Objectives

- Academic (course plan)
- Scientific (research goals)
- Verifiable objectives
Scope

- Limitations of work?
- Problem domain
- Outside scope?
Research methods

**THE SCIENTIFIC METHOD**

1. Observe natural phenomena
2. Formulate Hypothesis
3. Test hypothesis via rigorous Experiment
4. Establish Theory based on repeated validation of results

**THE ACTUAL METHOD**

1. Make up Theory based on what Funding Agency Manager wants to be true
2. Design minimum experiments that will prove theory is true
3. Publish Paper: rename Theory a “Hypothesis” and pretend you used the Scientific Method
4. Defend Theory despite all evidence to the contrary
Expected results

- Potential new knowledge
- Generalizations
- Applicability
- Usefulness
Work plan

- Course plan
- Teaching assistance
- Outline of your ambitions
- Must be flexible!

- Plan is a *living document*
  - rough plan for whole period
  - more detailed plan for next year
  - check status
  - revise if necessary
Work plan – Gantt chart example

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<thead>
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Figure I Gantt diagram for planned research work

Ref: Lukasz Paluchowski
References

- Background
- State of the art
Enjoy the Journey
After this seminar

- Set up a meeting with your Supervisor, discuss:
  - Your and supervisors ambitions and expectations
  - How to best be part of the scientific community, at NTNU and internationally
  - Format and frequency of guidance (supervision), including co-supervisors (and mentors)
  - How to keep the research plan as a living document throughout the studies
    - … set milestones
    - … mid-way evaluation

- Keep track of your time!
  - Time budget (all kind of activities)
    - The coming week (right after this seminar)
    - Last week before next seminar
    - Compare these two!

- ASK!
  - any question asked is better than NOT asked