Systems Engineering Course Research Methods; Information

by *Gerrit Muller*   University of South-Eastern Norway-NISE

e-mail: `gaudisite@gmail.com`

`www.gaudisite.nl`

Abstract

This module provides information about the course, such as the schedule.

logo
TBD

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status: planned
version: 0

Colophon

This course is a joint development of

Kristin Falk

Satya Kokkula

Elisabet Syverud

and Gerrit Muller

Research Methods Course Pre-assignment

- Determine a topic for the master project

- Position the topic in its context (e.g. in your company, in ongoing projects)

- Discuss the topic with its stakeholders

- Try to formulate the line of reasoning:

  - problem, goal, envisioned solution, rationale, open research questions

Course Schedule

	day 1	day 2	day 3	day 4	day 5
9:00	5 step framework, meta levels	literature why, what, how	research methods	re-iterate meta-levels	what is a good paper?
	line-of-reasoning	search applicable literature	re-iterate research design	re-iterate research questions how to answer them?	write an initial abstract
	break		break	break	break
10:00	specific initial problem statement	break	data collection, interpretation, analysis	data validity, bias	discussion, what is the flow in the paper?
		practical search techniques			
11:00	problem exploration	refine search	what data, how to obtain?	re-iterate problem exploration re-visit interview/survey	annotate the book plan with content and scope keywords
	break				
	framing the problem, prepare interviews				
12:00	lunch	lunch	lunch	lunch	lunch
			reflection and discussion	reflection and discussion	reflection and discussion
13:00	reflection and discussion	library resources	statistics for master students, including exercises	project execution and planning	practicalities, e.g. visualizations, citations
		reflection and discussion		break	break
	research questions	break		make initial project execution plan (PERT)	make a research design diagram
14:00	break	research design how, what to look for	break		
	formulate initial research questions		what scale to use how to interpret the data		
		initial research design		academic writing, book plan	master project supervision and assessment
15:00	break	break	break		
	feasibility of study	homework	ethics, plagiarism, privacy, confidentiality, regulations	break	break
				homework	homework
16:00	reflection and discussion	reflection and discussion	reflection and discussion	reflection and discussion	reflection and discussion

homework

- initial interview and/or survey ⎫ 30%
- initial problem analysis ⎭
- literature survey Body of Knowledge ⎫ 60%
- search secondary data sources ⎭
- read Research Methods paper ⎫ 10%
- elaborate research design ⎭

- continue literature survey ⎫ 50%
- write critic of 2..3 papers ⎭
- identify challenges and risks in problem definition   15%
- make research design more concrete 30%
- make book plan for the course paper   5%

- write a course paper, ca 15 pages
- line of reasoning
- literature survey
- research design
- execution plan
- book plan of final paper

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