



Aalto University
School of Science

Studying principles and guidelines

Antti Punkka
Presentation 0
18.9.2020

MS-E2191 Graduate Seminar on Operations Research
Fall 2020

The document can be stored and made available to the public on the open internet pages of Aalto University. All other rights are reserved.

Basic info

3-hour meetings on Fridays here in Y228a

- Student presentations
- Discussion

Teachers

- Prof. Antti Punkka, antti.punkka@aalto.fi, 050 353 3270, Y218
 - *Yes, phone / whatsapp can often be a better contact option than email*
 - Student of such a seminar course in 2002 and 2003
 - Teacher of such a seminar course in 2011-2013 and 2019
- M. Sc. Jussi Leppinen, jussi.leppinen@aalto.fi, Y223

Study format: seminar

Seminar

- Students give presentations on given topics
- Learning based to big extent on the class room discussions – be active!
- Presentations evaluated by both the teachers and the students

Weekly 3-hour seminar meetings

- Two to four presentations of 20 to 45 min
- Discussion on the presentation topics
- Last meeting's home assignments' model solutions

It is very advisable to take a look at the presentation background materials before the seminar meeting!

Course workload & timetable

The total number of presentations and consequently the number of seminar meetings depends on the number of students

- Each student gives 2 presentations ($\sim 24+16 \text{ h} = \sim 40 \text{ h}$)
- ~ 11 meetings ($\sim 33 \text{ h}$)
- Getting familiar with the topics before the meetings ($\sim 28 \text{ h}$)
- ~ 28 home assignments ($\sim 28 \text{ h}$)

The timetable and the topics for the ten first presentations will be posted on the MyCourses pages no later than Fri Sep 25

- Changes are difficult after publishing the timetable

Course material

Background material for each presentation will be announced on the MyCourses site


- **A few text books**



- *Available for a short loan from the course assistant, whose office is located next to printer with a scanning feature*


- **Scientific articles**

- + High-quality
- + Applications & different views on the seminar's topic
- Notation differs from paper to another
- Some papers mathematically very difficult
- Typically only parts of the material are relevant for the presentation

Getting the material: <http://scholar.google.fi/>

ewing Use of Decision Analysis 

Use of decision analysis in the army base realignment and closure (BRAC) 2005 military value analysis
PL Ewing Jr, W Tarantino, [GS Parnell](#) - *Decision Analysis*, 2006 - pubsonline.informs.org
In 2001, Congress enacted legislation that required a 2005 Base Realignment and Closure (BRAC) round to realign military units, remove excess facility capacity, and support defense transformation. The United States Army used multiple-objective decision analysis to determine the military value of installations and an installation portfolio model to develop the starting point to identify potential unit realignments and base closures, providing the basis for all recommendations. Ninety-five percent of the army's recommendations were accepted ...
☆  Viittausten määrä 124 Aiheeseen liittyviä artikkeleita Kaikki 18 versiota 

Robust portfolio modeling with incomplete cost information and project interdependencies
[J Liesiö](#), P Mild, [A Salo](#) - *European Journal of Operational Research*, 2008 - Elsevier
Robust portfolio modeling (RPM)[Liesiö, J., Mild, P., Salo, A., 2007. Preference programming for robust portfolio modeling and project selection. *European Journal of Operational Research* 181, 1488–1505] supports project portfolio selection in the presence of multiple ...
☆  Viittausten määrä 213 Aiheeseen liittyviä artikkeleita Kaikki 12 versiota Web of Science: 100

Works easiest
from Aalto's
computers

[PDF] informs.org

Full view

[FullText: sfx@Aalto](#)

About the presentations

First presentations: 45 min presentation time

- 20 slides is already a lot!!
- Use of blackboard / whiteboard to complement slides often a good idea
- Practice your presentation to control your time usage

Use the slide template from the seminar's MyCourses site

Prepare your material in English

About the presentations

Focus on your topic, not on making a recap of the material

- Remember your audience
 - *What do they already know?*
 - *Why are they here?*
- Note that scientific articles are positioned to existing literature
 - *Not typically needed in these presentations*
- What is my topic? Which parts of my material are irrelevant?

20 slides is already a lot

Small examples and figures are illustrative and help your fellow students in understanding

About the presentations

ALL references must be cited to (on the slides)

- Add a list of references as the last slide before your home assignment
- Referring to earlier presentations helps the audience
 - *“This resembles the algorithm in Simopekka’s presentation in that ...”*
 - *“Last time Niinaminna focused on ... Today’s topic differs from that setting by considering...”*

Name your presentation slide file *mmdd_surname.pptx* (e.g. *0918_Punkka.pptx*)

- Email the slides to the teachers before 2 pm of the preceding Wed
- ~~Print handouts to the audience~~

Greetings from students of earlier seminars

“What pieces of advice would you give to future students of such seminars?”

- “Start preparations **well in advance** by at least reading through your material...”
- “**Prepare** to ask questions and give constructive feedback to your fellow students.”
- “Remember to **practice** presenting. Have a **plan** before starting to build the presentation”
- “**Start preparing** your presentations early **enough** and don't neglect **practicing ahead** of time...”
- “**Aloita** diojen teko **ajoissa**.”

Troubles in preparing your presentation?

You have difficulties in understanding your background material

- *Solution 1: Read earlier presentations' background material*
- *Solution 2: Check the material your background material cites to*

You don't understand how your material is related to your topic

- *Solution 1: Re-read your material one more time*
- *Solution 2: Familiarize yourself with earlier presentations' materials*
- *Solution 3: Contact the teachers*

You should submit your presentation material in 2 days, but you've never been more lost

- *Solution: Visit Y218*

You forgot to prepare your presentation

- *Solution: -*

Home assignments

Prepare a home assignment and present it on the last slides

- Related to the your topic, solvable in 0.5-1.5 hours
- E.g., paper+pen / Matlab / Excel / ...

Prepare a model solution, email it to the teachers before 2 pm on the following Wed and prepare to present it on Friday

Other students will provide their solutions before/in the beginning of the next seminar meeting

- Grade the solutions on a scale from 0-10 and email the results to the teacher before the next seminar meeting

Keep the home assignments simple enough

Kotitehtävä 3

Olkoon 95 % VaR-mallin tarkasteluperiodi $T=425$ päivää. Laske mallin hylkäämisvirheen todennäköisyys muodostamalla 95 %:n luottamusväli N :lle (käytä keskeisen raja-arvolauseen antamaa approksimaatiota).

Excel on hyvä tässä.

Home assignment (1/2)

1. Write a Matlab program that solves a feasibility problem (of P) under the assumptions that the polyhedron $P = \{x \in \mathbb{R}^n \mid Ax \geq b\}$ is bounded and either empty or full-dimensional. The elements of A and b are integers. Moreover, specify E_o , V and v as proposed in this presentation (P is bounded, see slide "Specification of V "). Comment your code. To keep the answers consistent with each other (especially in assignment 2), the violated constraint $A_i x \geq b_i$ is chosen so that the row index i is minimized.

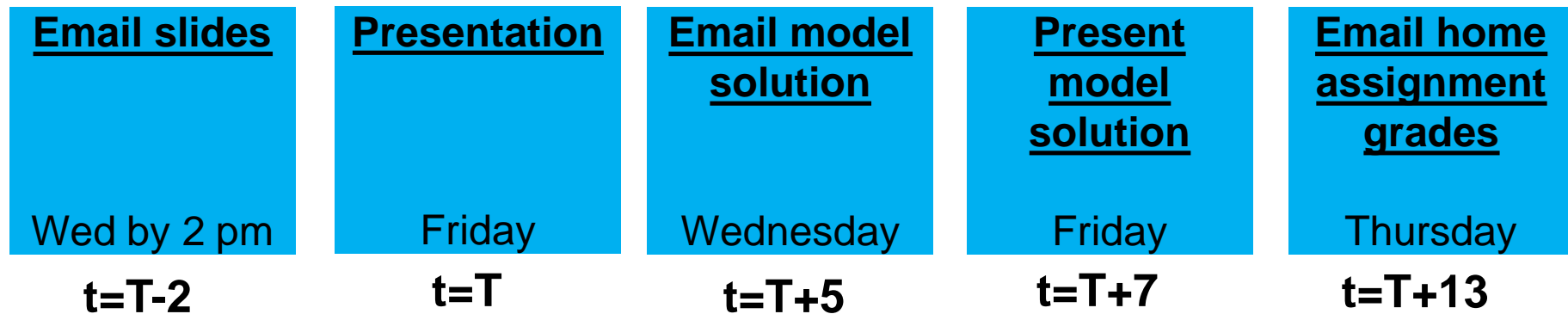
You can use the example of this presentation to verify the correctness of your code.

Home assignment (2/2)

2. Check whether polyhedron $P = \{x \in \mathbb{R}^3 \mid Ax \geq b\}$ is empty or not. How many iterations are needed? What is the feasible point after which it is concluded that P is nonempty (in case it is nonempty)? It is strongly recommended to use the outcome of assignment 1.

$$A = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \\ -1 & -1 & -1 \\ 2 & 0 & -1 \\ 6 & -4 & 1 \end{pmatrix} \quad b = \begin{pmatrix} 1 \\ 1 \\ 1 \\ -10 \\ 0 \\ 3 \end{pmatrix}$$

Presentation related DLs on one slide



Grading principles: presentations 60 p

Minimum requirement: both presentations successfully given

Your fellow students grade your presentation on a few attributes and give you feedback

The teachers acknowledge the students' grades and feedback in your presentation grade on scale 1-5

The final points for presentations = $7.2 \times \text{grade of pres\#1} + 4.8 \times \text{grade of pres\#2}$

- E.g. Grades 4.5 and 4 yield $7.2 \times 4.5 + 4.8 \times 4 = 51.6$ points*
-

Grading principles: other 40 p

these will be confirmed after the number of students is known

Participation (attendance): max 6-10 p depending on the number of meetings, min requirement ~80%

- **Min requirement yields 0 points**

Home assignments: max 26-30, min requirement 13-15

- **Total points received from other students' home assignments scaled linearly onto [0, max points]**

Course feedback 4 p

Next steps

“Attendance list”

- Present yourself with a few sentences
- I will mark that you’re present
- Mention Fridays which are not feasible for your presentations (if any)

VOLUNTEERS TO GIVE A PRESENTATION NEXT FRIDAY on

1. “Utility theory: elicitation of utility functions, risk attitudes, stochastic dominance”
2. “Applications: Bayesian networks”

Covid-situ can influence your possibilities to physically attend seminar meetings

According to what Aalto teachers have been told, *Aalto Learning Services (LES)* contacts teachers of courses with students who cannot attend

"LES will contact the teachers in charge of the courses from which students will be absent, to come up with alternative teaching arrangements"

In these cases, there is an opportunity to participate in ZOOM

Other practicalities

Do you use your computer for the presentation?

First presenters of the sessions: come 15 min in advance to set up the technical equipment