

AI CENTER
FEE CTU

Exam, Revision, Projects

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Exam PUI

Due to Covid-Pandemic – Exam Format: Online Written + Online Oral

We are examining PUI **fully remote**. Written exam is a test with questions that takes about two hours including down- and uploads.

Online Written: We will randomize numbers in the questions, so we need to preserve the mapping of questions and answers.

You will receive a PDF with the question and submit a text file and your hand-written derivations electronically

Online Oral: Lukas Chrupa and Stefan Edelkamp will conduct oral examination.

For one student, the oral exam will take about 10-15 minutes.

We will use *MS teams*.

Technical Setting

Order

Oral exam takes part after the written exam, once we have the results or at least the submissions from there.

There will be three persons **Stefan Edelkamp, Lukas Chrpa and You** in an online call.

For the written part: during your work on answering the question you should have a video running.

We will use a joint call for that, likely *MS teams* as for the lectures.

You must know

- when to be where in the web (web call as well as down/upload forum)
- where you are being supplied the questions, and
- where you have the opportunity for **an upload of the answers.**
- **We expect a text file with numbers** to be parsed (we will provide a sample) at the end, together with **pictures taken of your hand-written calculations.**

Easiest is, if the questions and answers are also put into a tar or zip file and uploaded.

The organizational aspects of the written exams are done by your tutors Jan Mrkos and Michaela Urbanovská

Exam in short

Requirements, Points, and Language

For attending an exam, you need to fulfill requirements for **Zápočet** (Check your KOS).

Total number of points possible to get from the exam is **50**.

You can get maximum of **30** points from the **written part** and maximum of **20** points from the **oral part**.

Oral exam can also overwrite written marks, if needed

Language

The questions in the written exam are in **English**. You can answer them either in **Czech or English**.

The questions in the oral exam are in **English**. You can answer them either in **Czech or English** (English is preferred)

There will be **mostly theory** in the oral part of the exam and **mostly practice** in the written part of the exam.

You can use your **pocket calculators** (no mobile phones).

Topics

Classical planning

- Planning Representation - PDDL, FDR, STRIPS
- Search algorithms
- Properties of heuristics
- Abstractions
- Relaxations
- Landmarks and LM-cut
- LP heuristics

Planning with uncertainty

- Formalisms (MDP)
- Simple temporal networks
- MDP algorithms
- Monte Carlo Tree Search

Content.

Written Exam (not the exhaustive list)

- Compute h_{\max} and h_{add} (for a given planning task)
- Trace in detail the computation of LM-cut heuristics
- Trace in detail the Value Iteration method
-

Oral Exam (not the exhaustive list)

- Difference between STRIPS and SAS formalisms
- What are landmarks
- Properties of heuristic functions
- What are Simple Temporal Networks
- What are preferences
- What is a randomized roadmap
- What are pattern databases
- ...

Exam Dates

Dates

We assume the oral exam to take place after the written exam in the exam day (we plan about 10-15 minutes per student). Other days might be arranged.

Discussion

In theory, we can handle all students in one day for a written exam, however, you might have different preferences when you want to do the exam.

Preliminary exam dates

- 3.6.2021 10:00 - 12:00 (written) 14:00-17:00 (oral)
- 8.6.2021 10:00 - 12:00 (written) 14:00-17:00 (oral)
- 10.6.2021 10:00 - 12:00 (written) 14:00-17:00 (oral)
- 15.6.2021 10:00 - 12:00 (written) 14:00-17:00 (oral)

Marks and Grades

Marking

As there are 50 of 100 pts remaining to the students for the exam, we have max 30 pts (min 15 to pass) in the written test, and 20 pts (min 10 to pass) in the oral exam. Oral might also adjust the written marks, if needed.

All pts, in ass1, ass2, written, oral are added and make up the final mark

Grading

As there are 100 Pts to get – Grades are given on the usual scale

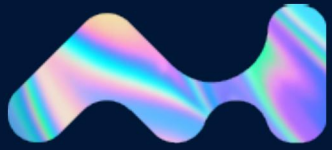
Master Thesis / PhD Projects.

- ▣ Reasoning and Acting in Dynamic (and Adversarial) Environments
- ▣ Learning Domain Control Knowledge for Planning
- ▣ Planning for Traffic Control
- ▣ Planning with (soft) deadlines

▣ Lukas Chrupa.

- MGMP: Multi-Goal Task-Motion Planning
- Planning with Pattern Databases
- Card Game Playing
- Sequential Sorting with QuickXSort

☐ Stefan Edelkamp.



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