Optimisation for Computer Science - MICS
Projects

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Project with Researchers

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- **Objective**
  - Apply optimisation techniques on real research problems
  - Collect and analyse results
  - Write a report in the form of a research article
  - Present the results
- **Duration**
  - 15 weeks
- **Mark based on**
  - Participation
  - Intermediate presentation: focusing on problem presentation/understanding
  - Final presentation: focusing on results analysis
  - Report

Schedule

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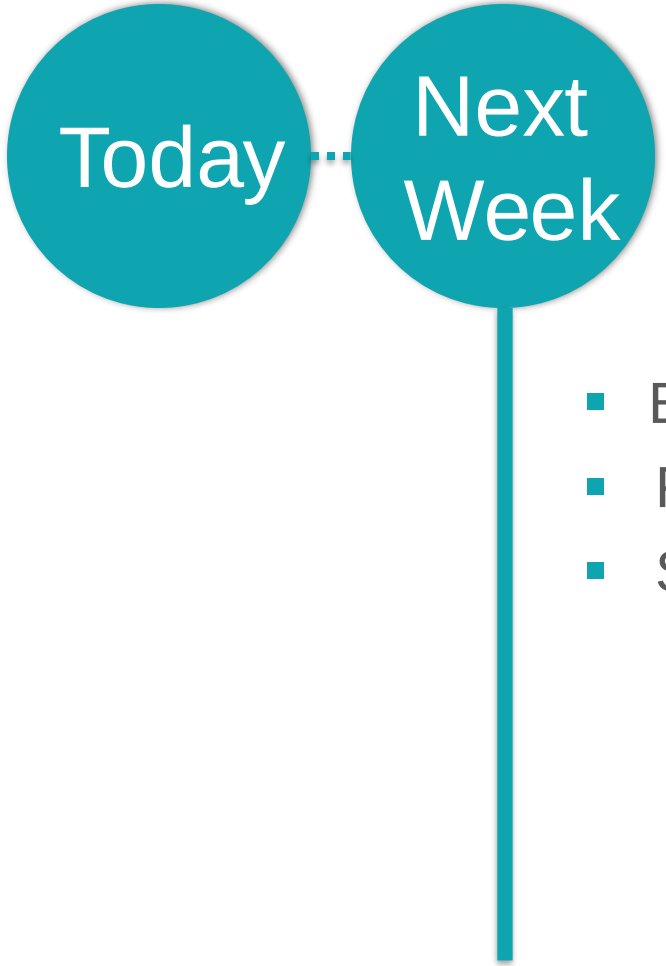
Today

- Presentation of the subjects by the researchers
- Projects description and presentation available on the Moodle (after this lecture)
- Students have one week to send their choice
  - List up to 3 projects in order of preference
  - Send the list to pascal.bouvry@uni.lu, gregoire.danoy@uni.lu

Schedule



- Each student is assigned to a project (group)
- First meeting with supervisor
- Start working on the project

Schedule

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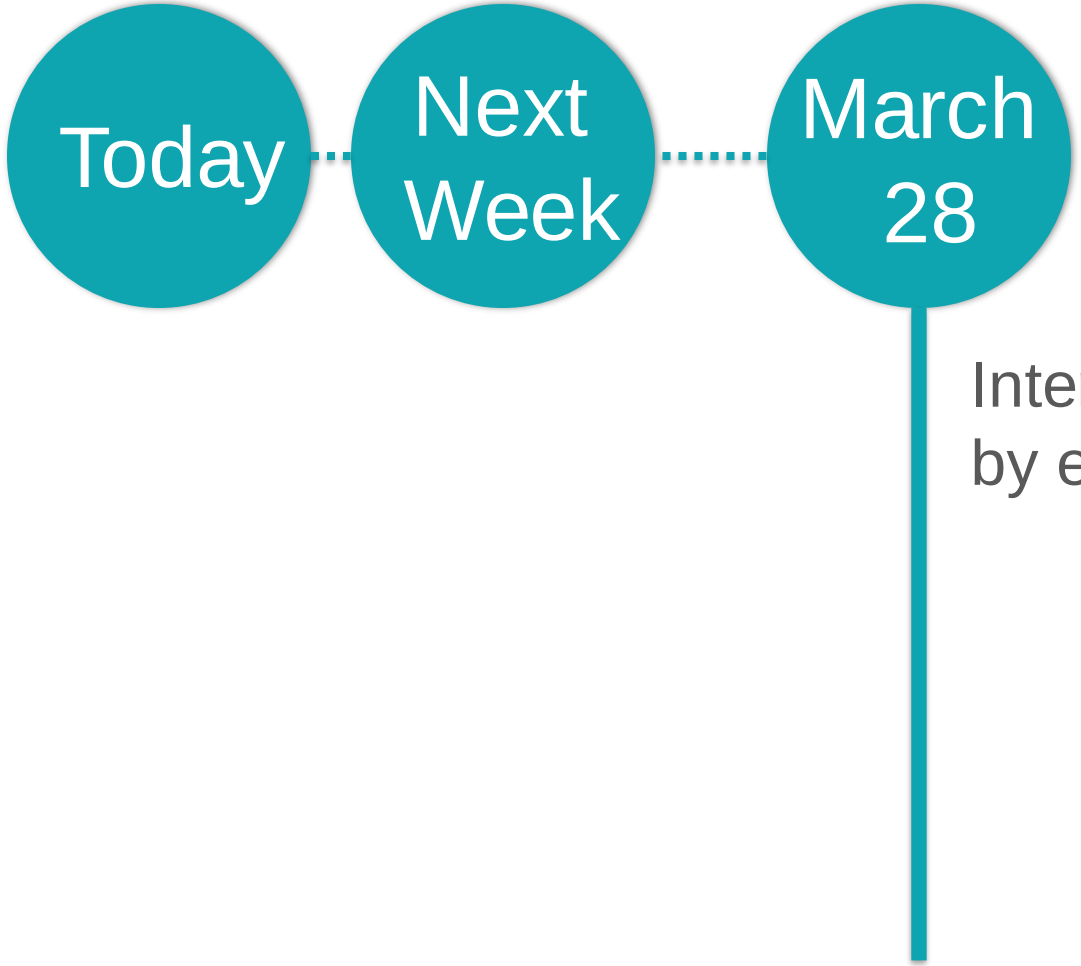

Schedule

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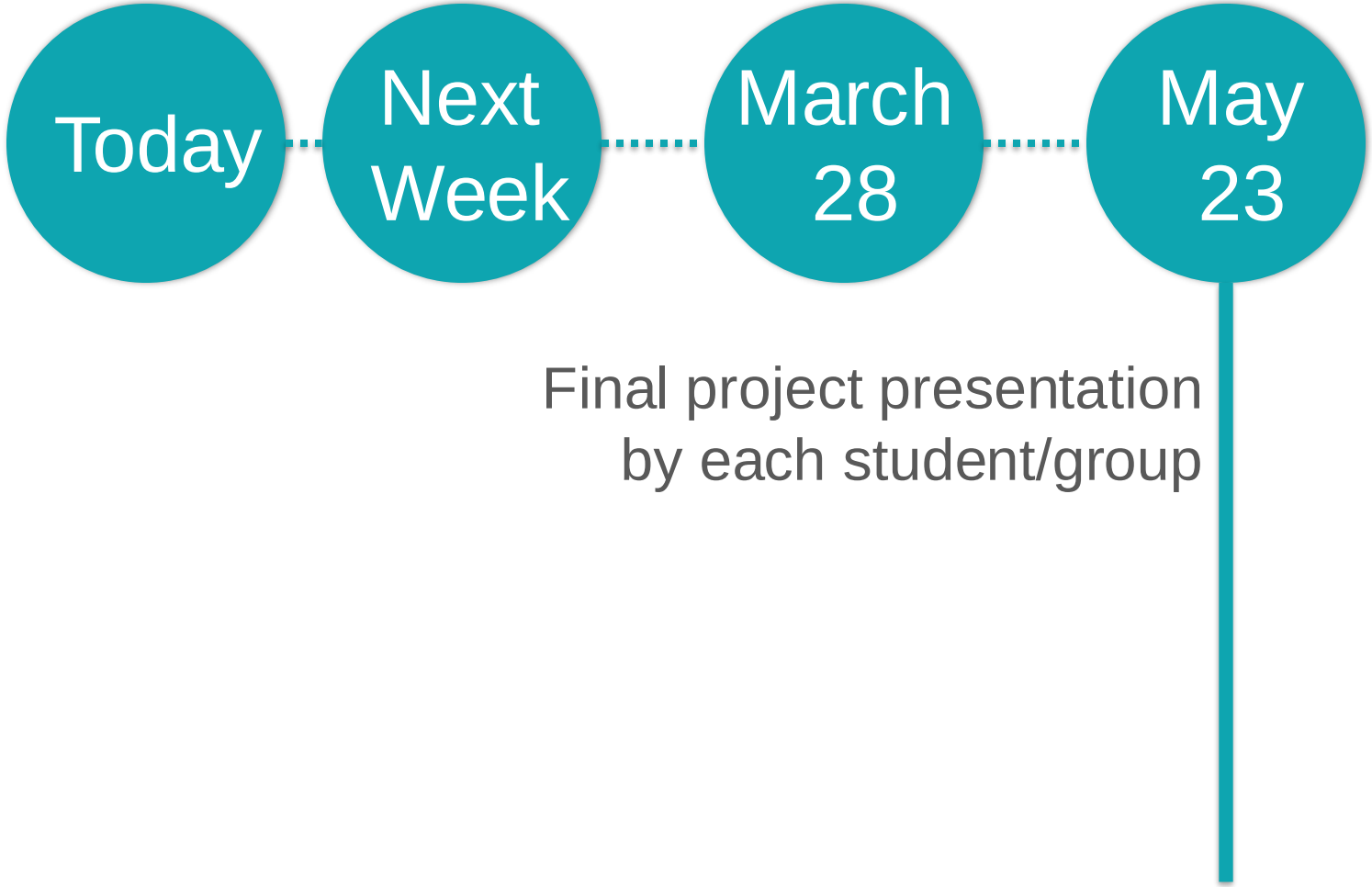

Schedule

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Working with supervisors

- **Working with experienced researchers on current open problems**
  - Experience real research work
  - Opportunity to put in practice knowledge in various domains (optimisation, programming, project management, etc.)
  - Can lead to a publication in a real scientific conference

- **Once projects are assigned:**
  - Meet with your supervisor(s)
  - Agree on a workplan with him/them (recommended: weekly meetings)

Intermediate Presentations

- **Date: March 28, 2025**
- **One presentation per project**
- **Max. 10 min per presentation**
- **The presentation has to focus on the problem presentation, i.e.:**
  - Context
  - Objective
  - Model (variables, objective function(s), constraints)
  - Optimisation approach(es)
  - Next steps

Final Presentations

- **Date: May 23, 2025**
- **One presentation per project**
- **Max. 10 min per presentation**
- **The final presentation has to focus on your contribution, i.e.:**
  - Proposed solution(s)
  - Presentation of the experimental approach
  - Presentation and analysis of the results

Project Report

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- **In the form of a research article**
- **Template will be provided on the Moodle**
  - LateX format (preferred)
  - Word format
- **Max. 8 pages**
- **Typical structure**
  - Title
  - Abstract: Summarising your contribution in the article/report
  - Introduction: General introduction to the research topic/problem
  - State-of-the-art: Short presentation of the existing research works related to the tackled problem
  - Problem Presentation: detailed/formal description of the optimisation problem
    - Fitness function(s)
  - Approach: detailed/formal description of the optimisation method(s) used
  - Experimental results: presentation of the experimental settings (parameters, instances, etc.) and analysis of the results
  - Conclusion
  - Bibliography

Article format - example

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A Sample *ACM* SIG Proceedings Paper in LaTeX Format*

[Extended Abstract] †

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ABSTRACT

This paper provides a sample of a LaTeX document which conforms to the formatting guidelines for ACM SIG Proceedings. It complements the document *Author's Guide to Preparing ACM SIG Proceedings Using LaTeX2, and BibTeX*. This source file has been written with the intention of being compiled under LaTeX2, and BibTeX.

The developers have tried to include every imaginable sort of "bells and whistles", such as a subtitle, footnotes on title, subtitle and authors, as well as in the text, and every optional component (e.g. Acknowledgments, Additional Authors, Appendices), not to mention examples of equations, theorems, tables and figures.

To make best use of this sample document, run it through LaTeX and BibTeX, and compare this source code with the printed output produced by the dvi file.

Categories and Subject Descriptors

H.4 [**Information Systems Applications**]: Miscellaneous; D.2.8 [**Software Engineering**]: Metrics—*complexity measures, performance measures*

General Terms

Theory

Keywords

ACM proceedings, LaTeX, text tagging

1. INTRODUCTION

The *proceedings* are the records of a conference. ACM seeks to give these conference by-products a uniform, high-quality appearance. To do this, ACM has some rigid requirements for the format of the proceedings documents: there is a specified format (balanced double columns), a specified set of fonts (Arial or Helvetica and Times Roman) in certain specified sizes (for instance, 9 point for body copy), a specified live area (18 × 23.5 cm [7" × 9.25"]) centered on the page, specified size of margins (1.9 cm [0.75"]) top, (2.54 cm [1"]) bottom and (1.9 cm [.75"]) left and right; specified column width (8.45 cm [3.33"]) and gutter size (.83 cm [.33"]).

The good news is, with only a handful of manual settings[1], the LaTeX document class file handles all of this for you.

The remainder of this document is concerned with showing, in the context of an "actual" document, the LaTeX commands specifically available for denoting the structure of a proceedings paper, rather than with giving rigorous descriptions or explanations of such commands.

2. THE *BODY* OF THE PAPER

*(Does NOT produce the permission block, copyright information nor page numbering). For use with ACM_PROC_ARTICLE-SP.CLS. Supported by ACM.

†A full version of this paper is available as *Author's Guide to Preparing ACM SIG Proceedings Using LaTeX2, and BibTeX* at `www.acm.org/eaddress.htm`

‡Dr. Trovato insisted his name be first.

§The secretary disavows any knowledge of this author's actions.

¶This author is the one who did all the really hard work.

[1]Two of these, the `\numberofauthors` and `\alignau-`

MICS - Optimisation for Computer Science

Questions?

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Presentation of projects by supervisors

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