Algebra and Discrete Mathematics
ADM

Bc. Xiaolu Hou, PhD.

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Time table

- Lectures (prednášky)
  - Friday 9:00 – 11:50
- Tutorials (cvičenia)
  - Friday 12:00 – 13:50
  - Tutor: Bc. Viktória Bordácsová
- Consultations (konzultácie)
  - By appointment, xiaolu.hou@stuba.sk
  - Office 4.03, or online

Grading

- Midterm – 50 marks
  - 14 multiple choice or fill in the blank questions, 3 marks each
  - 4 statement-based multiple-choice questions, 2 marks each
  - Online, AIS
  - Covers: Lectures 1 – 5, Tutorials 1 – 5
  - Room -1.42 (DIGILAB)
- Final exam – 50 marks
  - To sit in the final exam, you should obtain at least 30 marks during the semester

Attendance Policy

- Attendance at tutorials is compulsory.
  - Absences must be justified with a valid reason (e.g., medical certificate).
  - In case of more than two absences:
    - You must submit solutions to **ALL** questions from the missed tutorial within one week.
    - Submissions can be made via email (xiaolu.hou@stuba.sk) or in person.

Tutorials

- A summary of certain concepts from the lecture
- Discussion of tutorial questions
  - Recommend: try to solve the questions by yourself, then go through answers before the tutorial

Course Outline

- Vectors and matrices
- System of linear equations
- Matrix inverse and determinants
- Vector spaces and matrix transformations
- Fundamental spaces and decompositions
- Eulerian tours
- Hamiltonian cycles
- Midterm
- Paths and spanning trees
- Trees and networks
- Matching

Textbooks

- Andrilli, Stephen, and David Hecker. Elementary linear algebra. Academic Press, 2022. Fifth edition
  - Accessible online (free copy)
  - Alternative download link
- Anton, Howard, and Chris Rorres. Elementary linear algebra: applications version. John Wiley & Sons, 2013.
  - Accessible online (free copy)
  - Alternative download link
- Saoub, K. R. (2017). A tour through graph theory. Chapman and Hall/CRC.
  - Accessible online (free copy)
  - Alternative download link

Course materials

https://xiaoluhou.github.io/Teaching_material/

or

https://github.com/XIAOLUHOU/Teaching_material

Remarks

- **Proofs:** Provided for reference and deeper understanding
- **Errors:** Please report any mistakes via email