MATH PROJECT—SEMESTER 232

CALCULUS 2

- **Project problem**

  Read Section 1.2.1 and 1.2.2 (from page 19 to page 25) in the book: *Introduction to the Mathematics of Medical Imaging* by Charles L. Epstein (download the first two chapters here) and discuss how to reconstruct a two-dimensional object from its shadows.

  Then explain the formula for the area of D_h in Exercise 1.2.14 (on page 25 of the book).

- **Detailed requirements**

  - Students will work in groups. All members in the same group will receive the same project score.
  - Each group must submit their work in the form of a **document** (a .pdf file). **The cover page should** include a list of the group members, along with their student IDs and email addresses and photos of each team member (taken within 1 week from the project submission date).
  - *The project only requires reading, understanding, and presenting the topic in your own interpretation. The project does not require any Matlab code or any programming language.*
  - Each group will engage in a **direct (oral) discussion with the instructor** regarding the project, during which the instructor will pose questions to each group member. Note: There is no requirement to prepare slides or any presentation in advance of the discussion. Your group simply participate in the discussion and respond to the lecturer's questions.
    - Note: Group formation should ensure that all members actively participate in the project. If one group member does not understand the project, it will impact the group's score.
    - If there are any conflicts in your group while working together, try to solve them without asking the lecturer right away. If someone in your group isn't working well with others or doesn't understand the project (even after several disussions in group about the issue) or exhibits inappropriate behavior within the group, please feel free to email me. In such instances, the concerned member may be removed from the group and assigned to complete the task individually.
    - All group members must be present during the oral discussion.
  - The submission **deadline for the report (the document) is April 3rd**. A submission form will be sent to your group later. The exact time for **the oral discussion** will be announced later (**during the period from April 6th to April 14th**).
  - Independent work is highly emphasized in completing this assignment. Groups are not allowed to copy or share their work with other groups to avoid impacting the group's scores.
  - **How to make the report (the document)**:
    - Thoroughly read the specified content from the book.
    - Explain what you understand in your own words with proper grammar and spelling. Ensure your explanation clear and easy to read.
    - Focus on the requirements.
    - Things *not to do* in the report and the oral discussion:
      - Provide no personal explanations. This happens when you just copy content directly from the book or rephrase it in a different manner.
      - Include unnecessary elements into the report, such as historical information, advertisements, or unrelated discussions. Certainly, you can include definitions and results from other relevant resources to enhance the clarity of your explanation if needed.

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  - The scoring is evaluated as follows:
    - Full attendance of all members in the oral discussion: 1 point.
    - Report: 3 points.
    - Oral discussion: 6 points.

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