About the questions in
MATH 3407, Advanced Linear Algebra
Semester 2, 2019

The questions in this class have two types:

- Skill questions: questions where you follow a memorised instruction. These can be calculations (e.g. Homework 1 Q6a), or standard condition-checking (e.g. Homework 1 Q2), or finding something using a formula (e.g. Homework 2 Q6).

- Conceptual questions: questions that require you to think. These can be proofs (e.g. Homework 1 Q4), or can have a numerical answer (e.g. Homework 3 Q1). They can combine different topics.

On the midterm and final, most questions will be conceptual.

If you get all skill questions correct, you can pass.

In conceptual questions, I am looking for **understanding**, not simply the correct numerical answer. As a consequence:

- You may get points by writing down 1) the definitions of words in the question, as applied to the objects (vectors, matrices, functions,...) in the question; 2) any theorems that may be useful.

- There are no points for starting a calculation unless you explain why this calculation solves the problem.

- **Mathematically incorrect statements can lose many points**, as this tells me that you don't understand. Some examples from homework: dividing by a vector, ... (I don't penalise on homeworks, but I do on exams.)

Some more information about the questions:

- The questions (or part-questions) are **not** in order of difficulty. So look for part-questions that you can do easily; don't do the questions in order.

- The questions can be short or long.

- The questions can have many parts, usually with easy parts and hard parts in the same question. The parts can be related or unrelated.

- If a question says "write down" (not "find" or "calculate"), then it usually means no calculation is necessary. But you still need to explain your answer.

- In a proof question, or a question with a yes / no answer (e.g. is this set linearly independent), you must explain your reasoning extra-carefully, to convince me you are not guessing.

- You will not be asked to repeat exactly any proof from class, but the ideas of the proofs may help you to solve problems.

In the midterm and final:

- You can use calculators, and you will be given the reference sheet.

- Please be neat! If I cannot read your answer, then I cannot give you points. Using pencil or an erasable pen is better than crossing many things out.

- Please **start each question on a new page**. If you are skipping a question, please leave a lot of space. Make it easy for me to find your answer.

- Please **show all steps** in your calculations: a final answer without supporting work will not get full credit. In the final, you will have spare paper for draft calculations, but **only what is in the answer book will be graded**.