

## Reference Group Report

**Date:** 07.09.2020

**Course code and title:** TMA4165 - Differential Equations and Dynamical Systems

**Academic year (fall/spring):** Spring

**Students who have participated in the reference group. Name and study programme:**

Anders Hoel - MTFYMA

Gjermund Lyckander - MTFYMA

### The reference group's report on the quality of the learning activities:

#### Lectures:

The lectures were well prepared, reasonably paced, with good use of overhead projector as the main visual tool. The lecturer was great at making sure to check with the class if they understood what was lectured.

Post lockdown: The lectures were cancelled and replaced with self study. As the lecture notes were quite content dense, it made it difficult for some to do self study.

#### Texts:

The main study tool for most students were the lecture notes, which covered the entire curriculum. They were a great tool to accompany the physical lectures, but when the lectures were cancelled the material could have been explained in less mathematically dense wording.

D.G. Schaeffer and J.W. Cain. Ordinary Differential Equations: Basics and Beyond:  
Good, coherently structured with recurring and re-elaborated examples.

L. Perko. Differential Equations and Dynamical Systems:  
None of the reference group members had a chance to use it.

#### Exercises:

Comprehensive and challenging, with decent solution manuals.

#### Exam:

Due to the cancellation of all physical exams the exam form was changed from worksheet to an essay. The essay was of length 1000 to 1500 words, with five predefined topics to choose from. This is quite different from what the students were accustomed to, which made preparation difficult. Also, since you only had to write about one general topic from the curriculum, it made it so that you didn't have to be prepared for the entire curriculum, since you in many ways could prepare for one general topic and be reasonably confident that it would be represented on the exam.

One positive thing about having to write an essay for a home exam is that it makes collaboration nearly impossible, in contrast to a pass/fail worksheet on which several students can split the tasks between them and distribute solved exam sheets among their peers.

**Measures that may enhance the learning outcomes, as proposed by the reference group:**

In the event of cancelled physical lectures it would be advised to have digital lectures or videos, since the material becomes quite difficult in the latter part of the course.

Report writing tutorial:

<https://innsida.ntnu.no/wiki/-/wiki/Norsk/Referansegruppe+-+for+studenter> (Norwegian only)