Course information

October 25, 2021

Course period. 01 November 2021 to 17 December 2021 (lectures, exercises, computer labs). Schedule available here.

In principle the lectures are given on campus. If I cannot come, I'll inform you via Canvas and we will use the following zoom link (Meeting ID: 627 6829 7711, Passcode: 31415).

If you have symptoms that prevent you from coming to the campus, please stay at home.

Important dates. Be aware that some of the dates below may be subject to change.

- Start of the lecture: 01 November 2021, 10:00.
- Deadlines for the projects: 06 December 2021 and 10 January 2022.
- Last day to register to the exam: 20 December 2021. Contact me before the 16th of December via email (with a valid document from FUNKA) if you need more time for the exam.
- Exam: 15 January 2022.
- Last day to register to the re-exam: 25 March 2022.
- Re-exam: 11 April 2022.

Exercises. A list of suggested exercises will be provided in due time. If necessary, some exercises can be discussed during the exercise sessions.

Teachers: Johan Ulander (K2) and Sebastian Persson (Bt2).

Computer labs/Project. A list of computational tasks will be provided in due time. In addition, a lab report (written form) on a project is expected (**1.5** ECTS). Submission of your lab reports are done via Canvas and should be done before 06.12.21, resp. 10.01.22. If not done correctly, students have the possibility to (re)-submit their report (more information in due time).

Teachers: Johan Ulander and Sebastian Persson and Ioanna Motschan-Armen.

Examination and grading (6 ECTS+1.5 ECTS).

- Element 1 (Theory, **6** ECTS) is assessed through written examination. Expectations for the written exam:
  - Students are expected to know and be able to apply the main definitions and results (statements and possibly some ideas of the proofs) from the lecture in order to solve various tasks. Students should explain, analyse, evaluate, and demonstrate their mastery of the course content.
  - The exam may contain multiple choice questions, true and false questions, (parts of) proofs, or open-ended questions.
  - The exam may contain industrial tasks (pure and easy computations) and questions assessing students critical thinking skills.

  - If the exam takes place online, no detailed proofs will, most probably, be asked. In addition, you may be asked to check a box with a text like this: "Jag försäkrar att jag gjort tentan på egen hand utan att få hjälp från någon annan person och att jag själv formulerat alla lösningar."
  - No questions will be answered by the examinator 6 days before the exam.
  - Being able to do previous exams do not imply success in this year's exam.

  Grades: U, 3, 4 or 5.

- Element 2 (Project, **1.5** ECTS) is assessed through written lab reports. Grades: Fail (U) or Pass (G).

- To pass the whole course, all elements must have been passed. Grades (according to the grade obtained for Element 1): U, 3, 4 or 5.

Bonus points. Students have the possibility to get bonus points for the exam by doing various activities:

- Under *Canvas/Quiz* you will find weekly feedback surveys and self-test quizzes.

  In order to encourage you to study regularly, a student that passes all self-test quizzes (one miss is allowed) will earn **1 bonus point** for the exam. These quizzes are multiple choice questions. The following rules apply: The quizzes will be open from Fridays 10:00 to Saturdays 12:00. At most one mistake is allowed in each weekly quizzes. Students can miss at most one weekly quiz.

- In order to encourage your active participation, a student will earn **1 bonus point** at the exam if she/he, at least, posts one question and answers two questions on piazza (see below). The questions/answers must be relevant to the course and non-anonymous.

The awarded bonus points are only valid on the first two exam dates when the course is given.

Literature. The lectures should be self-contained and are based on the following references that one can consult if needed:

M. Asadzadeh and F. Bengzon: *Lecture notes in Fourier analysis*,
available as .pdf at link and errata.

M. Asadzadeh: *An Introduction to the Finite Element Method for Differential Equations*,
available as ebook under https://www.wiley.com/ or via the library. See also the physical version at chalmersstore.se or the previous draft as .pdf file.

G. Folland: *Fourier Analysis and Its Applications*,
available as ebook under ebookcentral at Chalmers library.

M.G. Larson and F. Bengzon: *The Finite Element Method: Theory, Implementation, and Applications*,
available as ebook under springer.

Canvas. All uploaded files will (most probably) be uploaded on the start page *Kursöversikt/Home*.

Please, set your Canvas account notification settings to get automatic updates of files and announcements.

Piazza. We will use piazza (access code 31415) as a platform for discussion. You can ask questions that also other students can answer. You can also ask questions anonymously (such questions cannot be counted for a bonus point).

You can also post a request to find a study buddy/teammates on piazza.

Common practice: It maybe perhaps better to answer a query, by not just providing the whole solution to an exercise, but rather by giving a way to get to the solution. It maybe a good idea to thank a student/teacher who answered your question(s).

For questions related to administration, please contact Elisabeth Eriksson.

For all other relevant questions, feel free to post on www.piazza.com (especially if you think that an answer may help other students) or send me an email or pass by my office (L2085).