

Optimization and Numerical Methods

Program 2020

Organiser: Francis Tuerlinckx, Geert Molenberghs
E-mail: francis.tuerlinckx@kuleuven.be, geert.molenberghs@kuleuven.be
Venue: Online (BlackBoard Toledo, access will be provided)
Software: Please use own software
Dates: 12, 19 & 26 October, 9, 16 & 23 November 2020
Time: 10:00 - 12:00 and 09:00 - 11:00
Literature: Course notes (instructors), web lectures
Credits: 2 EC (course notes, web lectures and Q&A sessions)
Participants: no maximum number
Sign up: francis.tuerlinckx@kuleuven.be and secretariaat.iops@rug.nl
Instructors: Geert Molenberghs (geert.molenberghs@kuleuven.be)
Francis Tuerlinckx (francis.tuerlinckx@kuleuven.be)
Katrijn Van Deun (k.vandeun@uvt.nl)
Tom Wilderjans (t.f.wilderjans@fsw.leidenuniv.nl)

Course Format & Schedule

The course is organized in the following format:

1. Web lectures need to be followed (for links, see bottom of this document). This can be done in the course participants' own time.
2. The course notes also contain exercises. It is very strongly recommended to try these.
3. A total of six online Question & Answer (Q&A) sessions are organized, in real time (two by Geert, two by Francis, one by Katrijn, one by Tom)

Important: goals of the Q&A sessions

- It is not intended to introduce additional material
- It is intended to respond to questions regarding course material and exercises
- In these Q&A sessions, the lecturers will also be able to paint the broader picture behind the material covered in the various chapters

Again, these are not formal lectures; it is important that the web lectures are watched prior to the Q&A session and that exercises are tried.

Important: efficient preparation

Questions can be submitted prior to the face-to-face sessions, by way of the "Discussion Board" on Toledo or by emailing them to the teacher. **Participants are strongly encouraged to submit questions ahead of time; it allows for efficient face-to-face sessions.**

Q&A Sessions

Session	Date	Time	Instructor
1	October 12, 2020	10:00 - 12:00	Francis Tuerlinckx
2	October 19, 2020	10:00 - 12:00	Geert Molenberghs
3	October 26, 2020	10:00 - 12:00	Tom Wilderjans
4	November 9, 2020	10:00 - 12:00	Katrijn Van Deun
5	November 16, 2020	10:00 - 12:00	Geert Molenberghs
6	November 23, 2020	10:00 - 12:00	Francis Tuerlinckx
Exam (voluntary)	To be determined		individual time slots

Course Material

1. The **course notes**, prepared by the instructors, are mandatory course material. They will be provided in digital form through Toledo or by email. The course notes contain a list of references with additional reading. The additional reading is optional.

2. Web lectures

Through below link or Toledo site of the course

<https://videolab.avnet.kuleuven.be/jukebox/?album=762b4b55c5315064f11d103dbd059a00>

3. A document with solutions to the exercises is made available after the Q&A contact sessions.

Evaluation

Course notes, weblectures and participating in the 6 Q&A sessions

Optional for those interested:

- A written project, of which the assignment will be given in due course
- The project will consist of a numerical optimization programming task
- Students can work in groups of 2 or alone, on the project
- This report should be handed in prior to the oral exam
- The oral exam (which is individual) consists of two components:
 - A five-minute presentation of the project by the student.
 - Questions and answers relative to the project and general understanding.
- The instructors will create an individual time schedule for the oral exam
- The oral exam will take place via BlackBoard Collaborate Ultra

Software

Students are encouraged to use their own software (on their own device). This can be used for some of the exercises. Evidently, the instructors are not necessarily familiar with a given software tool.