Courses:
Groundwater modeling
(for petroleum engineers)
and Groundwater Flow and
Contaminant Transport Modeling

Course information

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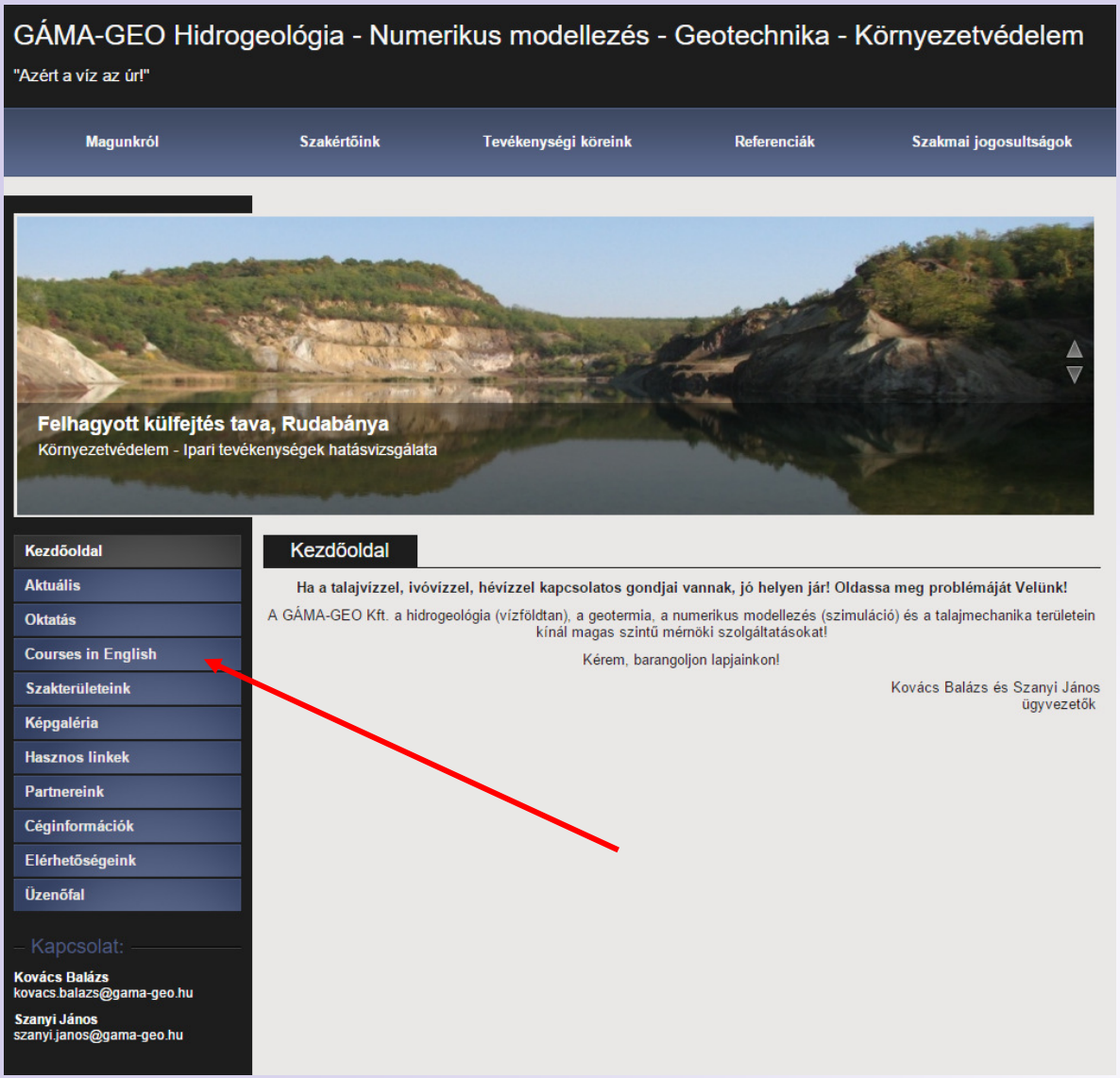
All information will be found on the net



http://www.gama-geo.hu

Time schedule for the courses

Planned topics

- ***February 13, 2017:*** *Topic: What is a model? Very basics of GW related modeling. Introducing Processing MODFLOW! Building the very first steady state GW flow model. The use of the most known MODFLOW packages. Particle tracking, drawing pathlines, determination of water budget.*
- ***February 27, 2017****: Transient GW flow modeling.*
- ***March 13, 2017:*** *Modeling vertical cross sections (unit basin, seppage under dams, etc.)*
- ***April 10, 2017:*** *Contaminant transport modeling of conservative tracers*
- ***April 24, 2017:*** *Modeling transient well-interactions*
- ***May 8, 2017:*** *Building a model on your own, demonstration of modeling abilities, check of self-made models (homeworks)*

Attendance requirement

Attendance list will be used!

Please take into account that there is no time for repetition or summary of the previous course materials during the lectures, meanwhile the topics of each lecture requires the understanding of the previous ones!

Consultation is only for students attending the course!

Possible ways to complete the course

- 1. **Use own computer and work alone** (The advantage of this method is that You may have all materials on Your own computer and You may continue or finish the tasks at home. The disadvantage is that You must be quick and very clear headed to understand the topics, to make Your own lecture notes and also to work parallel the computer! Choose this option only in case You like challenges!!!)
- 2. **Use own computer and work in groups of 2-3 people** (The advantage of this is that everyone has more time to understand the topics in details, meanwhile a group member prepares the lecture notes, another member works on the computer, and a possibly a third member is helping to the others. A disadvantage is the lack of digital materials on the computer of each of You but You can share it after the course. This is a recommended method to complete the course.)
- 3. **Only follow the topics without parallel work on own computer** (This makes understanding the most easily but this needs more efforts at home, to repeat the procedures and understand even the practical steps besides the theoretical ones. Choose this method if You prepared to work at home and to understand the course material immediately after the course (same or next day until You remember in details))

There is no BAT (Best available technology) please use the most convenient one for You ...

Software installation tips

- You may choose: to work with or without own computer
- There are no official computers distributed by us to the students!
- In case You use Your own computer/laptop:
  - no special configuration needed
  - Windows op. system
  - code Processing Modflow for Windows ver. 5.3.3.
  - Win7/Vista/XP preferred, there are some Hungarian Win10 computers where the software sometimes fails
- The software can be downloaded from the site: **www.simcore.com**. Please to **download the freeware version v5.3.3** and not the commercial version 8.0 or above!!! (Both can be installed but the commercial version will be restricted in model size that may inhibit Your work at a given stage).
- Please to install the code into a directory not far from the root (for. ex. d:\kb\pm533; c:\simcore\pm5 or similar, **don't use Your own directories or the documents directory created by the Windows!**

Home works

For students of the course GW Flow Modeling:

- 1. Steady state model of a well-field
- 2. Transient model of a well test
- 3. Transient model of well interaction

For students of the course GW Flow and Contaminant Transport Modeling

- 1. Steady state model of a well-field
- 2. Transient model of a pumping test
- 3. Investigation of a modified unit basin at unconventional boundary conditions
- 4. Modeling remediation of a contaminated site

All home works should be **completed before May 9, 2017**. They should be delivered both digitally (data sets and short resume) and in printed version (short resume and some figures of interest to demonstrate the work completed)

Whether modeling or real life, never give up easily!”
(Wen-Hsing Chiang, creator of PMWIN)

Thanks for
Your attention!