Tutorials and final project overview

1. Tutorials

The tutorial work for ACE045 is designed such that you can practice the concepts taught during the lectures. The majority of the work is directly related to a real site located East of Gothenburg near Utby. They, in fact, allow you to go through most stages of a site characterization cycle, i.e. from desk study to detailed characterisation using among others in-situ and laboratory techniques. The following tutorials are scheduled:

Table 1. Overview of tutorial topics and their link to the final project

Tutorial	Week number	Topic	Utby related	Hand in canvas
1	1,2	Geological interpretation from data	Yes	Yes
2	2,3	Hydrogeology	No	Yes
3	3,4	CPT interpretation	Yes	Yes
4	4	Interpretation of oedometer tests	Yes	Yes
5	5	Stereonets	No	Yes
6	6	Interpretation of triaxial tests	Yes	Yes
7	7	Advanced stress path testing	Somewhat	Yes

Note the last column in Table 1 indicates to what extent the tutorials relate to the Utby site interpretation. In case of YES they can have **an additional** question that links to other Utby related tutorials.

2. Final Project

The final project is aimed to assess the knowledge gained during the course whilst studying five scientific papers on the site characterisation of the Bothkennar test site in Scotland. This is a site with soft clay which was extensively characterised as part of a large research project in the UK. This soft clay is not necessarily similar to the Utby clay in Sweden (or is it?). The following papers (available at Canvas) will need to be studied:

- Paper 1: *Initial investigations of the soft clay test site at Bothkennar*
- Paper 2: *The engineering geology of the Carse clay at the National Soft Clay Research Site, Bothkennar*
- Paper 3: *Disturbance of the Bothkennar clay prior to laboratory testing*
- Paper 4: *One-dimensional consolidation testing of soft clay from Bothkennar*
- Paper 5: *Hydraulic conductivity of a recent estuarine silty clay at Bothkennar*

Summarise for each paper the main findings, e.g.

- Specific features of the Bothkennar site when compared to the Utby site.
- Purpose of the Site Characterisation methods used – what do the Authors want to learn? – where does it fit in the formal site characterisation process (which phase and which stage).

Discuss the methods used, e.g.

- if some of the methods are new to your group, would you expect them to be useful to use for Scandinavian clays (e.g. at Utby).
- Can we do better? The papers reflect the state-of-the-art in 1992. Discuss where improvements perhaps could be made.

The final report has a page limit of 32 pages (excluding appendices). Re-plotting of data for comparison with Utby results is encouraged but not mandatory.

3. Group size

A maximum of 4 students per group (freely to choose at Canvas) is set. It is expected that the same group works on the tutorials and the final project.

4. Submission procedure

4.1 Tutorials

Each tutorial needs to be handed in no later than 7 work days after the end of the tutorial (note that some Tutorials span two afternoons) via the assignments in Canvas.

4.2 Final project

The final project report (32 pages max.) should be submitted no later than one week after the final teaching week, i.e. 30 October 2020 via the assignments in Canvas.

5. Grading

5.1 Tutorials

The tutorials will be marked pass/fail. All tutorials need to be passed in order for the student to pass the course.

5.2 Final Project

The final project will be marked and feedback provided. The grading follows Chalmers procedures (U, 3,4,5), where grade 3 is a pass.

-for grade 3: The purpose and main findings of all 5 papers are well summarised within the context of the (theoretical/engineering) knowledge gained during the course.

-for grade 4: The above + discussion on the similarities/differences between Bothkennar and Utby

-for grade 5: Critical reflection about the appropriateness of the techniques used in Bothkennar and Utby