

Group Meeting #1

Agenda:

- Introducing the topic of the software lab.
- Discussing briefly the aim and methodology of the project.
- Providing recommendations regarding organization of group work.
- Assigning first task to startup the project.
- Discussing the future dates for group meetings.

Assigned Tasks:

As per the first meeting with the supervisors, the following tasks were assigned to the group members:

- Carry out the literature review process about different available failure criteria for composites. The goal of this task is to gain the required technical background about the mechanical behavior of composites, this requires knowledge in the following areas:
 - 1- Anisotropic behavior of composites.
 - 2- Composites behavior and failure modes under different loading conditions (e.g. Tension/Compression).
 - 3- Variation of composites properties in different directions depending on the orientation of fibers.
 - 4- Review of the current available models in FE-codes (e.g. Abaqus or LS-Dyna) for prediction of the failure in composites.
- Install Abaqus student version and get familiarized with the user interface, also perform a simple modelling exercise that will be provided soon by the supervisors via email.

Summary and Conclusions:

- With regard to the assigned tasks, its suggested that each member bring to the next meeting (2-3 Pages) summary for the literature review he performed.

- For the literature review task, the following references are recommended:
 - Johns, R.M., *Mechanics of Composite Materials*, 2nd Edition, McGraw Hill, 1999.
 - Berger A., *Numerical Modeling of Composite Materials based on a combined manufacturing crash simulation*, PhD, Queen Mary, 2014.
 - Abaqus user documentation (sections regarding composite material definitions).
- The literature review will be used also for the preparation of the first group presentation taking place in late May 2019.
- It's very important to look at the software lab guidelines published online to be aware of the evaluation criteria throughout the semester (link below):
https://www.cie.bv.tum.de/upload/lehre/softwarelab/sl2019/Guidelines_2019.pdf
- a Dropbox folder has been setup for the project on the link below:
<https://www.dropbox.com/l/scl/AAC4cYFjuzH2Wmh1y6b9V64jXMglXzV2Lak>
- The next meeting with the supervisors will take place on 8th May 2019.