Term Project

The Term Project will contribute 30 marks to the total in the following way:

- Assessment of the submitted files of the Group Term Project: 20 marks
- Viva on the Group Term Project: 10 marks

Important dates

Oct. 9: First deadline on formation of groups.
Oct. 12: Second hard deadline on completion of group formation.
Oct. 22: Submission of initial term project idea.
Nov. 3: Finalization of term project idea
Nov. 17: Submission of term project

Instructions regarding formation of groups:

- Each group will consist of 3 members.
- Since the total number of students is not a perfect multiple of 3, it is possible that one or two groups may consist of 2 or 4 members. In any case, if a group has fewer or more than 3 members for any reason, it has to be notified by Oct. 9 properly so that the finalization of the group formation can be done smoothly by Oct. 12.
- Please note carefully that at the time of final term project submission, a short description of who has done what has to be submitted. So keep that in mind while forming the groups.
- **One member of the group should email me (Jeevan) cc'ing the TAs (Amit, Sayan, and Ganesh) with the names of the group members by 7 PM, Oct. 9.** It is critically important that the TAs are cc'ed in the email.
- The email ids are:
  - Jeevan: `jeevanjyoti4@gmail.com` (do NOT use the institute email id)
  - Amit Bhowmick: `amitbhowmick555@gmail.com`
  - Sayan Batabyal: `sayanb6292@gmail.com`
  - M. Ganesh: `mailtoganesh313@gmail.com`

Instructions regarding formulating the project idea:

- The project idea should be the implementation of an elasticity problem using a computer algebra system. In order that the evaluation of the projects can be done in a smooth and time-effective manner, implementations done only through SymPy on Jupyter Notebook will be accepted.
- Solving a problem using numerical methods will NOT be accepted.
- Avoid plagiarism at all costs! If you read up about a problem somewhere and decide to work on it, cite the source. If you come across a particular implementation of a problem and decide to present a variant of it as your project idea, cite the source. **Plagiarism is the academic equivalent of stealing and will be penalized summarily by giving zero marks for the whole project.**

- While coming up with the project idea, keep in mind the following:
  - Is it too simple and probably not worth 30 marks? Then, think of something more challenging.
  - Is it too difficult and probably much more than 30 points? Then, think of something simpler.
  - Is the implementation and a proper description of the project practically possible within a span of about 3 weeks? (Note the important dates mentioned at the top of this document)
  - Is the project idea such that all group members can contribute properly to the final implementation? (Note again that at the time of final term project submission, a short description of who has done what has to be submitted)

Instructions regarding submitting the initial project idea:

- Prepare a Google document file to write out your project idea and share the link via email. This email must be sent to me (Jeevan) and cc'ed to the three TAs, and all the group members. The email subject must be: "`Term Project Idea: Group #`"
- Your Group number is available in this link.
- The project idea document must strictly follow the template in this link.
- The email regarding the project idea document must be sent by 11 PM, October 22 (I am extending the deadline by one day).

Instructions regarding final project submission:

- The final project will be evaluated based on the level of difficulty of the problem attempted, the implementation through code, and the description. This description part covers how the problem is introduced, the formulation method described, the results presented and discussed, and the references included. Simply writing the code with zero or poor description will be awarded poor marks.
- Be extremely careful against plagiarism and cite your sources.
- In Jupyter Notebook there is provision to write proper description using Markdown+LaTeX. Make full use of this provision to introduce the problem, present the mathematical formulation with proper equations, and present the results with proper discussions.
- I'd personally prefer to see all documentation included within the .ipynb file. However, in an extreme case, if any group feels that their problem description requires a separate report, then by all means do prepare a report separately. This term project report must again cover the important sections on problem introduction, formulation method, results and discussions, and references. This document must be typed in font size 11 or 12 with reasonable margins, page numbers etc. There should be a description of which part of the formulation is implemented in which input cell numbers / line numbers in the code.
- There is no upper or lower limit to the length of the documentation or description. However, an all-out effort must be made to present a full description and to discuss the important details in a clear and coherent manner. Where necessary, a descriptive figure or schematic with proper caption and labelling should be included.
- Whether writing the description through Jupyter Notebook or through a separate document, every group must ensure that their group number is clearly mentioned, the names of all group members are included, and a proper title of the project is given.
- The description **MUST** include at the end a list of who has done what in the project.

- Figures of line plots, surface plots etc. should be of professional quality. The axes must be properly labelled including SI units where necessary. If there are more than one plots in a figure box, the different plots should be distinguished from each other through different colours and line-styles and appropriate legends should be provided. Non-adherence to these basic rules will be severely penalized.
- The final code (.ipynb file) and, if written, the term project report (strictly as a .pdf file) must be submitted via email to me (Jeevan) and cc'ed to the three TAs, and also to all the group members. The email subject must be: "`Term Project Submission: Group #`". The body of the email must include the Term project title, the names and roll numbers of the group members, and a list of the files attached (in addition to the actual attachments).
- The final project submission email must be sent by 11:55 PM, November 17. **IMPORTANT:** Submissions made after this deadline will be summarily given a 50% penalty.