**Group Project and Assessment AY2022 Sem 2**

**Group Project:**

* Please form your own group with 5 students for each group. Based on the enrolment of 34 students as at week 3, there will be 7 groups, so the last group will have 4 students.
* Do choose a group leader among yourself, for purpose of coordination and discussions. The group leader shall inform me of your team members by Friday 3 February 2023, and the topic of your group project by Friday 10 February 2023.
* Each group will do a project on themes related to “Living with Mathematics”, which need not be limited to those topics covered in the lectures.
* Problems related to mathematical puzzles, patterns, games are not preferred. Modelling of Covid-19 is also not preferred.
* Students are to propose own topics. Some possible topics are: Parallax methods to measure very distant objects like stars; Application of trigonometry and associated techniques in investigating car accidents; Novel use of conic sections in real life problems; Optimization of land for housing and recreation in a new town; Modelling of traffic condition within NTU or elsewhere; Time-table scheduling for a large school in NTU; Family finance and budgeting with various constraints; Occurrence of financial crisis; Evacuation plan in big building in event of crisis; Investigation of seasonal floods in Malaysia or elsewhere; Modelling of spread of common flu; The distribution and mapping of Dengi in Singapore or other places; Modelling of social ills of gambling; Optimizing the utility bills of households; etc.
* Each group is to submit a formal report. The report should be from 10 to 15 pages long with 12 point font size and 1.15 spacing. The format is fairly flexible and may include the following information: Title of project, Group members, Objectives, Motivation for the problem, Review of related works, Problem formulation and mathematical derivation, Model justification, Data collection/validation, Algorithms, Results and observation, Inference/conclusion, List of reference materials.
* The formal report is to be checked through Turnitin to obtain Turnitin Originality Report and shall be submitted together with the formal report to the instructor. Copying in part or whole from existing work is considered plagiarism and hence prohibited! The formal report and Turnitin Originality **Report must be submitted by 31st March 2023, 6.00pm**. Late submission will be penalised.
* Each group will give an oral power point presentation via Teams in the final 2 weeks. The schedule will be arranged later. Each presentation will be a maximum of 15 minutes, plus 5 minutes for Q&A. Presentation will be graded.

Project Assessment:

* Each member within the team shall evaluate the performance and contribution of fellow team members. The average weighted score of that member will be used to multiply the total score for the group so as to obtain his/her score.
* The project report will constitute 15% towards the final grade and will be graded by the instructor with 3 broad criteria: (i) Objectives and motivations, problem formulation, mathematical tools (20%); (ii) Mathematical techniques, derivation, justification, validation (30%); (iii) Novelty, difficulty, inference, presentation (50%).
* The group presentation will constitute 10% towards the final grade and will be evaluated by the instructor with 3 broad criteria: (i) Interesting content (30%); (ii) Understanding and mathematical rigor of the problem (30%); (iii) Quality of presentation (40%).