

## COMPUTATIONAL METHODS MEEN3332

### Project Part 2

Deadline: Tuesday 31<sup>th</sup> November

#### Project rules

The course project offers you the chance to earn a 10% bonus grade. It is designed to accompany the course material and develop your programming skills. The project needs to be solved in MATLAB or Octave. We will simulate some real applications and you will have to work individually or in groups of up to 6 students. To respect your workload from other courses, the deadlines are generous, but be respectful of them. The project will be submitted on Blackboard in the form of a Word document. Any handwritten parts need to be scanned/photographed and inserted to your word document.

Designate a team leader. The last three digits of the team leader's student ID are XYZ. This parameter will be used in our problems.

#### Problem 2

You are working as engineers in an oil refinery. There are five fuel silos connected as shown below. The system is at steady state and your manager is interested in finding the concentration of Sulfur in the silos (and in the fuel delivered to the tanker and the pipeline). You know all the volumetric flowrates and the concentration of Sulfur in the fuel coming from the wells. You are to solve this problem by a) Cramer's rule, b) Gauss elimination with pivoting, c) Jacobi method, d) Gauss-Seidel method and e) using Matlab or Octave.

