



## Project I Description

**Project Name:** Design of a two-phase waste management system that is eco-friendly

**Sponsor:** N/A

### Project Overview

In the North Metn region there is currently a crisis in disposing of the residential and commercial waste, including how to collect, sort for recycling and dispose of unrecyclable waste. This project consists of developing a two-phase solution for waste collection and disposal, first using a central system where the entire waste management process is done out of a single location at Bourj Hammoud for a specified period of time to be determined according to existing capacity and needs, before a second decentralized system is developed at the level of municipalities for waste collection, sorting and recycling before dumping at Bourj Hammoud. The solution should be eco-friendly in a way to maximize to possibility of recycling the waste and minimizing damage to the environment.

More specifically students are asked to

- Collect data on the volume and distribution of the waste that needs to be collected on a daily basis
- Develop a two-phase solution for waste collection that minimizes cost and time. Each solution should provide the schedule, routing and number of trucks needed.
- Develop an efficient and effective solution for sorting and treating waste prior to disposal.
- Provide suggestions for final waste disposal that minimize cost and are sustainable

### Project Areas

- optimization & simulation
- facility planning

- engineering economy
- lean principles

<b>Project Deliverables</b>	
<ul style="list-style-type: none"><li>• Survey of best practices, standards and new technology available for waste collection and disposal</li><li>• Investigation of different system design solutions and justification for the proposed one</li><li>• A report emphasizing the economic and sustainability aspects of the proposed solution and highlighting the risks associated with implementation of the proposed design.</li></ul>	
<b>Team Size and Majors needed</b>	
INE 4 students	

