**Fall 2018-2019**

**IENG490 Introduction to Manufacturing and Service Systems Design**

**Project Narrative**

**Project Topic**:

**Establishing a facility in TRNC for the production of the rubber and plastic parts of drip irrigation systems**

The Island of Cyprus suffers long, hot, and dry summer. The sources of the sweet water are not enough for both population and agriculture. It is true even in the TRNC which still gets sweet water from Turkey via an under-sea pipeline. Therefore, it is very important to use economic irrigation systems. The most developed irrigation technology is drip irrigation. It has the property that only the irrigated plants get water. Other irrigation technologies make the whole surface wet and use a much larger amount of water in this way.

The facility you design must produce the rubber and plastic parts of the drip irrigation system. It means tubing and pipes, emitters, valves, and joins (connecting two or more tubes).

**Connection to IENG492**

IENG492 is the continuation of IENG490. Students, who passed successfully IEN490 this semester, will continue the same topic in IENG492 next semester. The results of this semester work can be used next semester in IENG492.

**Working in teams**

You must work in teams both in the courses IENG490 and IENG492. The ideal size of a group is four students. The course starts with forming the groups. You are responsible for finding your co-operative partners.

**Project Requirements**:

As a requirement in this course, you should submit your progress report on November 14, 2017, Tuesday and your final project report on December 28, 2017, Thursday 16:00. Finally, at the end of the semester you should present your work; the potential presentation dates is January 18, 2018, in the afternoon. Alteration is possible.

The first project report; **progress report** must include at least the following items as **related to the industry** you are going to design:

1. Types of available technologies,
2. Existing high capacity facilities abroad,
3. Drinking water market in the TRNC,
4. The products (at least 3) you decided to produce including size and way of packing (for example recyclable, non-recyclable, for sport, household, etc.)
5. ***Raw materials*** other than sea water needed for manufacturing the products,
6. ***Standards*** related with your facility and the products,
7. Related rules & regulations in the TRNC.

The **final project report** must include all items above plus at least the following items:

1. Design including scaled drawings for the products (***at least 3 products***) you decide to produce.
2. Process Design (information on the machinery and operations used).
3. Demand forecasts for the products you decided to produce; take into consideration even the change of the population.
4. Estimated market share of your company
5. Transportation systems to be used by your plant (both within and outside your plant) that you are going to design in IENG492 course.
6. A feasibility study for the Plant you are designing (costs, revenues, operational profitability, payback period etc.).

**Assessment methods**

The evaluation of the performance of students is mainly based on individual performance. Only the progress and final reports are assessment methods such that each member of a group gets the same percentage.

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| Assessment method | Percentage |
| Attendance including  participation | 10 |
| Progress report | 10 |
| Midterm exam | 20 |
| Final report | 20 |
| Presentation | 20 |
| Final exam | 20 |

The subject of the midterm exam is the progress report. Similarly, the subject of the final exam is the final report.