

## IE 499 – Summer Practice II

### Report Content

**Part 1.** (10 Points) Fill out the Company Identity Card

**Part 2.** (20 Points) Write a three-page report about the company and the highlights of the production system from an IE perspective. This report should include general information about the company (e.g., ownership, size, product range, competition, etc.), its organizational structure, the major components of the production system along with classification (e.g., MTS, MTO, ATO, ETO and hybrids for manufacturing systems and Service Shop, Service Factory, Mass Service, or Professional Service for service systems) and layout type.

**Part 3.** (50 Points) Focus on a particular process within the production system. -Describe the process both verbally and using the appropriate charting tools. -Collect the necessary data and analyze the process in detail to identify problems or improvement opportunities from various perspectives such as efficiency, profitability, productivity, quality etc. -Fully define an industrial engineering problem to address the most critical deficiency/deficiencies identified in the analysis phase. -State the objective(s), define the parameters, the controllable variables and the constraints. Discuss if there are any soft constraints in your list. -Propose a modeling approach to solve this problem. Develop a model (this can be a mathematical programming, stochastic, statistical, simulation, conceptual, or any other appropriate model). -Discuss the feasibility issues. Are there multiple feasible solutions? Is there a clearly identifiable optimum solution? Suggest alternative solution approaches to this problem. -You do not have to solve the problem and suggest a recommended action. It is sufficient to provide a clear roadmap for your proposed modeling and solution approach.

**Part 4.** (5 Points) Summarize sustainability issues in the sector in which the company operates, focusing on (i) environmental challenges and (ii) effective and efficient solutions the company/companies can implement.

**Part 5.** (3 Points) Prepare a half page report summarizing any team work you have engaged in during your summer training. In this report, explicitly state (i) whether you have acted as a member of a team, (ii) whether this team was interdisciplinary, and (iii) your role in the team. If you have not engaged in any team work, state this and explain the potential benefits and use of an interdisciplinary team work in the organization that you have practiced in.

**Part 6.** (5 Points) Reflect on your summer practice experience and elaborate on the importance of professional and ethical responsibility. Discuss specific instances where you or other personnel faced ethical dilemmas or had to demonstrate professional behavior. How did these experiences shape your understanding of professional and ethical responsibility? Additionally, consider the impact that adherence to these standards have on the work environment, team dynamics, and interactions with colleagues and clients.

**Part 7.** (3 Points) Conduct some research about how to prepare a resume for engineers. Prepare your resume and seek feedback from an engineer or manager at the company.

**Part 8.** (4 Points) Write a one page report about your career plans based on this summer practice experience. In particular, list the criteria that you would use in selecting a good starting position upon

graduation with a BS in IE. Example criteria may be salary, location, promotion opportunities etc. Rank these criteria in descending order of their respective importance in your decision. Discuss how this current company performs in terms of your criteria. Discuss if you would be willing to work at a company in the same sector.