IE 477 FALL 2020

SUGGESTED CONTENT FOR SEMESTER PROGRESS REPORT

Please note that there is no single outline that we want you to adopt. This is only a suggestion.

Note that we want you to have a report that shows your current attained level in the project. Hence, we expect that you will use appendix in an organized way to show your performed work, which may not necessarily a part your major findings. Please check the document entitled "IE477 Tips on Writing Reports "previously posted in course WEB page before you start.

1. Brief system description
   Provide some general information about the company and describe its service/manufacturing system. A relatively short description will be sufficient.
2. System Analysis and Basics of Suggested Project Work
   Suggested content:
   a) Detailed description of current operations related to your project work ("*current way of carrying out operations*")
   b) Analysis and interpretation of the data, if collected, during the system analysis.
   c) Problem definition and needs assessment. Use numeric results of the analyses to emphasize and/or support the assessed needs.
   d) The objectives and scope of the project. Here, we ask you to specify the deliverables of your project at the end of two semesters, as decided (and probably revised later) during the proposal presentations with industrial advisors. Some details may be necessary to make your statements clear.
3. Literature review and sector analysis. Recall that because of your literature review, we are interested to understand how and why you have selected the approach you are taking as compared to what is available in the literature.
4. Proposed System (Methodology)
   Suggested content:
   a) Inputs and outputs of the proposed system ("*suggested way of carrying out operations*")
   b) Major components (subsystems or elements)
   c) A simple flowchart that schematically describes inputs and outputs, and the relations between the major elements of the system would be greatly beneficial. (This will provide the conceptual model of the system)
   d) Detailed description of the models/policies that you have developed for the entire system or for each element of the system
   e) Solution approaches – may not be complete. Nevertheless, for those which are not complete, make sure that you give sufficient details.
   f) Verification of the solution approach(s) – Describe the results and/or how you plan to verify.
5. Project Plan
   a) The summary of project plan that you have followed throughout the first semester, including the progress made after the proposal stage

b) The suggested plan to compare the current system (*as is*) with results of your proposed approach with the current system inputs (validation). Details including measure (or measures) of comparison, values of these measures in the *as is* case, details of the data to be used is expected to realize your plan. (* - Please, see the footnote.)
c) The project plan for the next semester including: Work packages should be determined; Responsible team member(s) should be determined for each work package; Timetable indicating when each work package should be completed

6. References
7. Appendix: Please make sure that each appendix clearly (and independently) describes the information you place. This means that you may need to explain figures and help the reader to follow what you intend to have in the appendix.

(*) To clarify the three stages that you heard or will be hearing frequently:
Verification of a model: You built a model with the expectation that it represents certain trade-offs you observe, and it yields results that are meaningful and comparable. Verification stage does not need any real data, but you need to make sure that the model is working as intended, even in some "extreme" situations that you will not expect to observe very frequently in real life. This stage will make the model potentially useful. **We expect this stage to be completed by the end of the Fall semester.**
Validation of a model: In order your model to be acceptable, you need to show that under a given set of conditions, your model results are identical (similar, close enough) to the results obtained in the real system under the same set of conditions. There are numerous ways to reach a valid model. This stage will give credibility (a synonym for validation in some dictionaries) to the model. **This is what you need to plan for the next semester, as asked above.**
Benchmarking: Once you have a valid model, now you can compare the model results under different conditions with the current system. In other words, you now have a standard for measuring or judging other things of the same type – called benchmarking. After benchmarking studies, one will be able to **measure the benefit the proposed approach** compared to the current system.