MIS5102 Midterm Exam Study Guide

The following is a list of items that you should review in preparation for the exam. Note that not every item on this list may be on the exam, and there may be items on the exam not on this list.

This will be a closed-book, closed-notes exam. The exam will be a mix of short-answer (1-2 sentences) and longer answer (3-4 sentences) questions. You will be asked to be concise in your answers.

You will be asked to explain the major concepts of the course to date, and relate them to the cases and articles we’ve covered. You should also be able to apply these concepts to new scenarios. For example, you might be asked to summarize the things you learned from the Wawa case and create guidelines for a company trying to facilitate changes to their business model by rethinking their core processes.

**Major topics:**

- **What is systems analysis?**
  - Why is understanding process important?

- **Process and Systems Thinking**
  - What is a system?
  - How does “systems thinking” differ from process thinking?
  - Disruptive innovation theory, the signals of change, and how to identify potential customer segments.
    - What makes an innovation disruptive? How do they become disruptive?
  - Causal Loop Diagrams and Stock Flow Diagrams: What are they used for and how do you read them?
  - Colby Case: Unintended consequences in a technology systems implementation.

- **Understanding Process**
  - What part does understanding process play in understanding the larger system?
  - The role and the application of process mapping, process decomposition, journey mapping, and swim lane diagrams in understanding business processes.
    - This means: you should be able to interpret one of these diagrams that’s already created for you, or create a simple one from a problem description
  - Best practices for understanding a business process.
  - Determining where a technology solution fits within a process (i.e., ordering kiosks).
  - Wawa Case: How understanding process can lead to organizational change.

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• **Defining the Problem**
  o The role of root cause analysis in defining the problem and its scope.
    ▪ How do affinity analysis and the “Five Whys” aid root cause analysis?
  o The role of RACI charts and stakeholder analysis in defining the problem and its scope.
  o The purpose of creating “toll gates” and how process analysis helps find where to put them.
  o **CVS Case:** How a careful analysis of root causes can lead to process redesign, and how technology solutions can aid that redesign.

• **Requirements Gathering**
  o The role and importance of requirements in a Request for Proposal.
  o The problems and the positives of the SDLC (and specifically the Waterfall Model).
  o Techniques and best practices for eliciting requirements – where do requirements come from.
    ▪ Their role in: defining the problem, understanding process, and systems thinking.
  ▪ **Watson Case:** Eliciting requirements for unstructured or hard-to-define problems. And the balance between fostering innovation while maintaining order.

• **Project Portfolio Management**
  o Key considerations in selecting projects to include in a portfolio
  o Role of quantitative and qualitative evaluation in project selection
  o Using decision trees to maximize portfolio value
    ▪ Calculating and interpreting expected return
  o **AtekPC Case:** The role of a Project Management Office in creating a cost effective way of delivering projects with positive outcomes.