678 Project Guidance and Grading

10% on class participation:
- Peer review presentations: demonstration of relevant knowledge application.
- Peer review contributions: collaborative engagement with projects of others.
- Evidence of study: knowledgeable reference to the readings.

30% on operational model – due by a specified date (get from instructor) – Deliverable #1:
- Two-page operational story: clear evidence of a plug-and-play, drag-and-drop agile system in operation demonstrated with response objectives, requirements, values, response enabling principles, and operational/integrity management – all wrapped inside a story of the system-in-operation, delivering its values.
- Three-part (3 ppt slides) Response Ability Model: relevance and clarity of key concepts.
- Grading: this deliverable is intended to establish a baseline for the project and expose misconceptions and misunderstandings early on – so that instructor-feedback can be employed in the final deliverable. Sufficient and engaged material delivered for meaningful feedback will not detract from the final grade.

60% on final conceptual design report – due by a specified date (get from instructor) – Deliverable #2:
- Articulate a detailed description of conceptual design: applying the tools and concepts covered in the course, demonstrate the degree of your understanding – sufficient to be implementable by one skilled in the arts.
- Evidence of study: knowledgeable reference to relevant literature and readings.
- Grading: Demonstration of a utility understanding of tools and concepts earns a B. Demonstration of insightful understanding and application earns an A. Faking it with pages of drivel earns a C, or lower (if possible).

Package deliverables: as Microsoft Word with embedded PowerPoint plus a separate duplicate-slide PPT file.
Name your file(s): 678D1 or 2-<clast name>-<first name>V<version #>
Example: 678D1-DoeJohnV1.doc (version numbers insure distinction if revisions occur).
Send file(s) to: your instructor. DO NOT SEND PDF FILES, or set any editing/security restrictions.
Some Deliverable Guidance

The term project is supposed to be completed within a specific number of weeks after course completion (get specifics from instructor), with an interim deliverable a few weeks after course start (get specifics from instructor). Earlier deliveries are encouraged. You are responsible for meeting the delivery dates.

The project proposes the conceptual design of a class 1 (reconfigurable) agile system. With instructor permission, the project may optionally analyze an already existing system. Any type of system is an eligible candidate provided it has relevance to your professional work environment: software, hardware, product, process, strategy, enterprise, system-of-systems, weapons, etc – virtually anything composed of sub-units which work together for common purpose. The focus of the design effort is of course on the system’s ability to respond effectively to unpredictable circumstances – which means that the operational responsibilities (usually carried out by people) for response actions and mechanisms are part of the design effort.

Guidance for the two project deliverables is as follows:

1) Operational Model – encompasses approximately 2-3 MS Word pages – plus a file with 4 PowerPoint slides. The 4 PowerPoint slides are collectively referred to as the Response Ability (RA) model, and include a Reality Factors (RF) slide, an RS analysis slide, an Agile Architecture Pattern (AAP) slide, and an RRS principles slide. The 2-3 page MS Word story verbally animates the bullets and graphics in the RA model. The verbal animation should give the reader a U-R-There feeling of the system in actual operation and a sense of the key response values and mechanisms it provides. The system’s strategic themes/objectives should be clearly stated. In the usual case where the system does not yet exist, your prose should project a "vision" of the future, as if the system already exists. You could think of this as a different approach to a Concept of Operations (ConOps) document - sort of an executive summary showing the value proposition told as a story. It is often useful to write a first draft of the "story" first, then extract the bullets and create the graphics for the RA model. Then iterate until you have the sense of a compelling story backed up by a bulleted summary of the key reality factors, response issues, design principles, and operational management responsibilities; and a graphic image of the drag-and-drop architectural concept. Absolutely key is a complete and meaningful Agile Architectural Pattern (AAP) – showing modular resources, active infrastructure responsibilities, a few typical system configurations, and the passive infrastructure standards that constrain/enable resource interaction.

You are likely to find more bullets and information creeping into the RA model than gain explanation in your story, as you imagine the system in your head. That's okay, as this will be your map for developing the subsequent conceptual design document. The 2-3 page story provides enough text to tell a compelling value-packed story without losing the reader in distracting detail. The operational story should be preceded by a system description paragraph and bulleted system-environment CURVE elements. The story plus 4 PowerPoint slides total result will be the introductory material for the subsequent detailed conceptual design document for the second deliverable. Note – you must include your name at the top of this document.

The purpose of the 2-3 page Operational Story is to:
- provide a compelling and memorable visualized value proposition to the reader; and
- provide a map of your subsequent conceptual design document.

The detail in the 4 slide Response Ability model should show:
- key selected reality factors;
- key selected proactive and reactive response issues, each with key metrics [t, c, p, s];
- an agile architecture pattern diagram showing the resources, active and passive infrastructures, and a few different types of system configurations.
- key selected examples of applied RRS design principles; and

Key selected is the operable phrase. You choose those items that are most important to the "response-able" characterization of the system and its values.

The material you provide as deliverable #1 should be matured well beyond first draft thinking - and will probably take a few iterations. Your deliverable will be reviewed with feedback targeted within seven-to-ten days of receipt, if possible.

You are the architect/designer, consider me the person who will implement your system based on what you send me as D1/D2. Thus, CURVE, Op Story, RF, RSA, RRS, and AAP should instruct me in what you want implemented (Op Story and AAP), how you want it implemented (AAP and RRS), and why (CURVE, Op Story, RF, and RSA). What you send me is your plan that you want me to understand and implement as you intend – so make it a clear complete communication. D1 is a preliminary plan – and my comments on D1 are my confusions, questions, and attempts to decipher what you really meant that wasn’t communicated effectively.
2) Conceptual Design - approximately 20-30 MS Word pages (additional to deliverable #1) due by a date specified by the instructor. These pages document the conceptual design in sufficient detail to guide the efforts of one skilled in the arts of final functional design and implementation. You could usefully view this document as a systems proposal that ties objectives and values into methods for accomplishment.

As you develop this conceptual design you will likely revise and augment the operational model submitted as Deliverable #1. Whether this is the case of not, the operational model should be included with the transmittal of the conceptual design as an integrated document.

The conceptual design should include sections that cover:

1. An introduction to the problem and/or opportunity, with discussion of the CURVE elements that shape the system environment and prompt a need for an agile approach, and with discussion of the value proposition for an agile approach that will effectively deal with the environment CURVE.

2. Response objectives, keeping in mind that this project is intended to focus on the system’s need for agility. This discussion is intended to set up the contextual focus for all sections that follow this one, and may well be about the strategic themes on the activity map later discussed in section 5, or may be about key RSA response objectives that are necessary to achieve the strategic themes, but in essence is about the benefits of agility that the system will deliver.

3. Reality factors, with discussion, that identify key uncooperative external forces that the system must be agile enough to deal with.

4. Response issues and metrics as an RS analysis, with all bullets discussed as concepts that are considered to be specific system-design requirements. Metrics may be couched as hard specifications or as targets that recognize the possibility of trade offs and acceptable compromises. This is where the RS Analysis form is presented and each of its issues discussed briefly, perhaps organized as eight paragraphs, one for each Change Domain.

5. A strategic activity web and related discussion that shows the desired user-expressed reputation goals and the key enabling activities that cause this reputation, with discussion of their nature and relationships.

6. Agile Architectural Pattern diagram, with discussions of the five responsibilities of Integrity Management (active infrastructure), and the 5 standard elements of the passive infrastructure.

7. An RRS brief indication of the key application of design principles, which may be satisfied by the RRS work shown in the iconic Response Ability model of deliverable 1 plus some discussion that removes any doubt about what the bullets intend to convey.

8. A closure matrix and discussion that will be the important demonstration of your understanding, as it describes the way an Activity employs RRS Design Principles to solve RSA Response Issues. Chapter 7 of Response Ability (the text book) provides the preferred approach: select one activity that has a lot of RRS principles employed to address a lot of the issues, detail the process steps for the activity, then do a paragraph for each issue addressed by the activity that discusses how the RRS principles will be employed to address the issue. Do a second activity if the first was not rich enough in issues and RRS principles to demonstrate your command of the knowledge.

9. A brief conclusion that ties the conceptual design into the strategic themes and the original objectives. One approach might consider the activities as system features, the themes as system advantages, and the objectives as system benefits. Features cause advantages which cause benefits. Your choice.

10. References – this section should list the references that informed your work and were cited at the appropriate place within your discussions. Include hyperlinks whenever possible. Employ formatting for your references appropriate to a publishable paper ("Chicago Style" is preferred). References serve a distinctly different purpose than footnotes/endnotes and bibliographies, and one should not be substituted for the other. Most importantly, external-to-course references indicate that you know something about the problem and solution space as reflected in the literature. References should not be limited to course text and materials. References to course text with page number indicates some reading may have occurred. Useful references to external literature show that you know something about what you are proposing.

Footnotes and endnotes generally show what is relevant about a reference or expand on the relevance of a point in the document that would otherwise clutter-up the text flow. Bibliographies generally list a larger body of relevant literature than is actually cited in the document, but that has informed your knowledge base (you have read them).