**IT 7993 Capstone Project Final Package Guide**

Dr. Lei Li

**General Instructions:**

Please prepare required documents and files into one single compressed (zipped) file and submit the file to D2L drop box by the due date specified in D2L calendar.

# The final package should include following items. Detailed instructions for each item are listed in the sub-sections below.

1. A cover sheet – the document list included in the package.
2. A project solution report – a report to project stakeholder including problem statement and analysis, as well as solution design and development.
3. A project experience report – experience on project planning, management, and reflection of teamwork.
4. Relevant project files – e.g., source codes (if applicable), data files, posters, etc. See section below for details.

# General Formatting Requirements:

The cover sheet/reports should be saved in MS Word or PDF format. Times New Roman font, 12pt, single spaced. The documents should be professionally formatted and free of grammar and spelling errors.

# Detailed Instructions:

## Cover Sheet

The cover sheet should include

1. Project information such as project name, project information website, team members, and date.
2. A list of documents included in the package.

## Project Solution Report

The project solution report is a document to project stakeholders which includes problem statement and analysis, as well as solution design and development. There are general two types of capstone projects: development based, and research based. The solution report requirement for each type of projects is different and is listed as follows.

* 1. **Requirement for development-based project solution report**

1. *A title page* - project name, project information website, team members, affiliation, and date.
2. *An executive summary* – high level overview of the project (what’s the problem, why it’s important, and what your team has done). Limit this section to 200 to 400 words.
3. *Project presentation* – a) Youtube link to project formal presentation; b) Youtube link to project short video; c) Youtube link to poster presentation (if applicable)
4. *Introduction* - describe the context and goals of this project, including business and technical backgrounds. Try not to exceed 2 pages.
   1. Business and project background including business information, context, problems, and the general goal – what’s the problem to solve and why it’s important?
   2. Specific project scope, objectives, and deliverables – overview of the project requirement and plan.
5. *Analysis and Design* – analysis of the problem and solution design. Try not to exceed 4 pages.
   1. Technical background - explanation of the technical environment, including major relevant concepts, practices, technologies, and products, etc.
   2. System design – system/technical architecture (use diagrams to illustrate the architecture if possible), system flowchart, major components/features of the system (overview), coding and testing plans, documentation consideration (e.g., user manuals), etc.
6. *Implementation –* how the design being implemented. Try not to exceed 6 pages.
   1. Summary of the implementation – development environment, coding and testing.
   2. Major features of the system – use screen shots to illustrate the main feature of the system.
7. *Conclusion* – summarize the project and discuss the future directions.
   1. Project summary - assessment of project outcomes (general and by objectives and deliverables): how successful is this project? Have you achieved the original goals? Please provide detailed description and explanation of each.
   2. Limitations and future direction – what are the limitations? What could be improved in the future?
8. *Reference* – list any references used in the report using APA format.
9. *Appendix* – Any documentation/information needs to be attached to this report. Only include highly relevant one. Other documentation could be included in the package as separate files.
   1. **Requirement for research-based project solution report**
10. *A title page* - project name, project information website, team members, affiliation, and date.
11. *An executive summary* – high level overview of the project (what’s the problem, why it’s important, and what your team has done). Limit this section to 200 to 400 words.
12. *Project presentation* – a) Youtube link to project formal presentation; b) Youtube link to project short video; c) Youtube link to poster presentation (if applicable)
13. *Introduction* - describe the context and goals of this project, including business background. Try not to exceed 2 pages.
    1. Business and project background including business information, context, problems, and the general goal – what’s the problem to solve and why it’s important?
    2. Specific project scope, objectives, and deliverables – overview of the project requirement and plan.
14. *Related studies –* what others have done? Try not to exceed 3 pages.
    1. What other people/organizations done in the problem domain?
    2. Industrial standards/practices used in the project (if applicable).
15. *Research method* – analysis of the problem and solution design. Try not to exceed 3 pages.
    1. Describe the methodology used in this project (e.g., interview, survey) and explain why it’s appropriate.
    2. Research design – describe your research design in detail. For example, if survey is used as method, research design could include, i) development survey instrument; ii) identification of survey participants; iii) distribution of the survey; iv) methods for analyzing the survey results.
16. *Research finding –* present the results of your research. Try not to exceed 6 pages.
    1. Summary of implementation – an overview of the how the research design being implemented.
    2. Present the research findings from analysis of the related studies, results of survey/interviews/evaluations, etc.
17. *Conclusion* – summarize the project and discuss the future directions.
    1. Project summary - assessment of project outcomes (general and by objectives and deliverables): how successful is this project? Have you achieved the original goals? Please provide detailed description and explanation of each.
    2. Limitations and future direction – what are the limitations? What could be improved in the future?
18. *Reference* – list any references used in the report using APA format.
19. *Appendix* – Any documentation/information needs to be attached to this report. Only include highly relevant one. For example, is survey instrument/interview questions could be included. Other documentation could be included in the package as separate files.
20. **A Project Experience Report**
21. *A title page* - project name, project information website, team members, affiliation, and date.
22. *Project planning and management summary*
23. Overview: how did you manage the whole project (including scheduling, task distribution, progress monitoring, etc.)? Did you follow any good project management practices?
24. Summarize the techniques, tools, and practices. Discuss where you did well and where you need improvements.
25. Project process: describe the project process by stages or milestones. Arrange them by chronological order from the beginning of the project. Explain major objectives, activities, events, achievements, and challenges in each milestone.
26. Team contribution summary: describe team member roles and contributions of each member (listed by each member).
27. Workload summary: present man hour sub-totals by project phase (milestone) and deliverable. Summarize this from the Gantt chart. Note just to provide high level summaries and some overall stats. Do NOT simply put the Gantt chart here.
28. *Team reflection on project experience* - summarize your project experience as a team. Please respond to each of the following questions.
    1. Project success factors: discuss the most important factors for project success. Particularly discuss the project owner’s comments on where you did well.
    2. Team collaboration and communication experiences.
       1. General collaboration experiences: how did you collaborate in this project? Any good practices? Anything that did not work well?
       2. Meeting arrangements and experiences.
       3. Collaboration system use: what tools or software systems have you used to facilitate collaboration and communication? Provide some brief description of each and describe how they were used. Also evaluate its usefulness and ease-of-use. What features are most useful?
       4. Other experiences: what worked and what did not in team collaboration?
    3. Challenges: summary of technical and non-technical challenges and how the team dealt with them.
    4. Areas for improvement: discuss all other areas where you can improve, especially address the weaknesses pointed out by your project owners.
29. **Relevant Project Files**

Create a coversheet and two sub folders. Compress all file/folder into one zip file.

* 1. *Project files coversheet* – list each file/folder arranged in the “project files” and “progress report files” sub-folder.

## *Project files sub-folder (create further sub folders if necessary)*

Please include as many files as possible. Maintain the original file type format. These may include:

* Source code, scripts, or configuration files (zipped into one or more files)
* Data or database copies
* Manual and references
* Other types of files and resources which you produced or collected

## *Progress report files sub-folder (all in PDF format)*

1. Approved project plan
2. Three milestone reports.
3. Final version of the Gantt chart
4. Communication logs
5. Project presentation slides
6. Project poster

# Grading

The grades for the final package are determined by the quality and completeness of the package content, as well as instructor’s evaluation of the whole project. Please read the requirements above carefully and provide all materials for each section and arrange them in the specified structure. See capstone project grading rubrics(provided as a sperate file) for details.

Ask questions if you are not clear and need clarifications. The team will receive one common grade generally.