Syllabus
CS 682: Systems Analysis and Design Methods
Spring 2026
Section A1

Text:
System Analysis & Design W/UML 6th edition by Dennis, Wixom & Tegarden, Wiley & Co. Publishers. ISBN-978111955917 ISBN-9781119713548

Instructor:

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Availability:

Normally I am available during business hours at 617-283-6680 (cell). If not, you can leave a voice message or contact me via email.

Schedule:

See separate documents on the Blackboard Learn Web Site. (https://blackboardlearn.bu.edu)

Location:

See separate documents on the Blackboard Learn Web Site. (https://blackboardlearn.bu.edu)

Focus:

The focus of the class will be to interactively discuss contemporary issues and methods of systems analysis and design. The methodology will include lectures, group discussion, mini case studies, and presentation of your group project. The assumption is that each student brings professional experience and background which contributes to the analysis and discussion of the material.

Course Objectives:

Successful contemporary information systems analysis, design, implementation and evaluation are complex endeavors. It requires not only technical understanding, business acumen, and knowledge of systems analysis theory and methods, but also the ability to be an effective change agent within multifaceted organizations.

At the end of this course, students will have demonstrated:

1) Understanding of the basic building blocks that encompass the systems analysis and design effort, including the systems development life cycle, systems planning techniques, and the precise modeling of data, processes and networks.
2) Ability to evaluate and communicate technical information in the context of a formal presentation targeted at a management audience.

Philosophy:

Based on the assumption that many of the attendees of this class are balancing a professional career, personal life and educational commitment, I have tried to structure the workload to minimize work outside the classroom. However, each

student will be required to read the chapter assigned, be prepared to discuss the minicases contained therein and complete the group project assigned. In addition, each student can gain additional, optional credit by submitting written answers to the study questions assigned each week. There will be a total of approximately 100 questions assigned during the semester and around 1/20 of a point will be earned for each correct answer submitted. Thus, each student can increase his / her final grade by one half of a full letter. (i.e., a C to a C+, a B to a B+, an A- to an A, etc.)

Class Structure:

The classes will be divided into three segments – lecture, interactive discussion of the minicases and presentation of group projects.

Academic Conduct Code:

Cheating and plagiarism will not be tolerated in any Metropolitan College course. They will result in no credit for the assignment or examination and may lead to disciplinary actions. Please take the time to review the Student Conduct Code:

http://www.bu.edu/met/for-students/met-policies-procedures-resources/academic-conduct-code/

Note: This should not be understood as a discouragement for discussing the material or your particular approach to a problem with other students in the class. On the contrary – you should share your thoughts, questions and solutions.

Absences / Missed Assignments:

Class Participation accounts for 5% of the overall grade. Students who miss a class will not receive participation points for that class. If the absence is on an exam night, the exam points will be lost unless a makeup exam has been scheduled in advance. Since we will review all homework assignments on the day they are due, no late assignments will be accepted.

Grading Policy:

The class grade will be based on the following formula:

- ✓ Class Participation……..…....05 Points
- ✓ Mid Term Exam……25 Points
- ✓ Final Exam…….…….35 Points
- ✓ Week #3 Project Description……0 Points
- ✓ Business Requirements Presentation / Paper…...10 Points
- ✓ Project Proposal Presentation / Paper……...15 Points
- ✓ Presentations (2 at 5 Points each)..…….……10 Points
- ✓ Study Questions (Optional)…….05 Points

Grading: Class participation, the midterm exam and final exam will represent 60% of your grade. Your two papers will represent 25% of your grade and the presentation will be worth 10% for a total of 100% or 100 points. The answers to your weekly questions will be corrected and returned to you and will have an extra credit impact only. If all your answers are correct, your grade can increase by one half of a full letter. If all your answers are incorrect, your grade score remains unaffected. If your answers are somewhere in between, your grade score

will increase accordingly. All optional written homework assignments are to be handed in, in hard copy, before the beginning of class on the day they are due. No email or electronic submissions will be graded. However, if a TA has been assigned to the course in lieu of submitting a hard copy of your assignment, it must be emailed to the TA.

Grading scale: Based on a 100-point scale

%	Grade	%	Grade
95+	**A**	**76-78**	**C+**
91-94	**A-**	**73-75**	**C**
87-90	**B+**	**70-72**	**C-**
83-86	**B**	**67-69**	**D+**
79-82	**B-**	**65-66**	**D**
		<65	**F**.

Grade Definition:

A= Excellent performance. Work is exemplary and worthy of emulation by others. Students are in full attendance and constructively contribute to the learning environment.

B= Above average performance. All assignments are complete and exhibit a complete understanding and an ability to apply concepts.

C= Average performance. Accomplishes only the minimum requirements. Oral and written communication is at an acceptable level for a graduate student.

D= Demonstrates understanding at the most rudimentary level. Work is minimally passing.

F= Work is not passing, characterized by incompleteness, lateness, unsatisfactory demonstration of understanding and application.

Assignments:

Class Preparation:

1) You will be expected to read the appropriate chapter of the text and be prepared to discuss its associated minicases prior to attending class.
2) After you read the appropriate chapter, you should review the study questions on the web site that are associated with that chapter.

Optional:

1) Each class member may submit answers to the 5 to 15 true/false, multiple-choice, fill-in-the-blanks, short essay questions or special project assigned each week. Hard copy versions of all submissions must be handed in before the class that they are due unless a TA has been assigned to the course then in lieu of submitting a hard copy of your assignment, it

must be emailed to the TA.

2) Please note that BU's Academic Conduct Code requires you to receive a zero for any homework assignment in which your responses to the short answer essay questions are not in your own words. In other words, just copying the answers on the class slides and submitting them will violate the policy, result in a zero grade and could result in a failing grade for this course.

Project:

Each student will select a business problem or opportunity that requires automation, reengineering, or other computerized system solution. Your solution will include a review of and analysis of all the related business processes and workflows that might be impacted. Your solution must demonstrate that you have addressed the root cause of the problem or why the opportunity was ignored rather than its related symptoms.

Your selection should be something you are familiar with and reflective of an end user scenario. Project proposals for developing a system for resale or for a startup / new venture with no history of expenses or revenues will not be acceptable.

Technology upgrades that do not include a great deal of input from all its users will also not be suitable. The project requires your team to be either employees of or consultants to the enterprise that will benefit from the project, and the project owner is in place before your first presentation. In addition, your team has been notified that your project is competing with other enterprise projects for the limited funds available.

1) For Week 3 each team will submit a one paragraph written description of their selection
2) Your first presentation will consist of an oral (Power Point presentation) made to your enterprise's Approval Committee and written report that terminates the Analysis phase of the Systems Development Life Cycle (SDLC). Keep in mind that the Analysis Phase **focuses primary on Requirements Determination**. On the date assigned for your first presentation, each team will hand in a hard-printed copy of their Power Point Slides and of a 1-3 page (350 words per page) executive summary addressed to their supervisor that states the business problem to be solved and identifies the purpose of the project. The executive summary is a very concise summary of the complete proposal that allows a busy executive to quickly determine which parts of the proposal that they need to go through more thoroughly. If a TA has been assigned to the course a copy of both the presentation (with presentation notes) and a copy of their 1–3-page paper must be emailed to the TA.
3) **Other requirements include:**
    a. **Each presentation should take no less than fifty (50) minutes and no more than sixty-five (65) minutes plus be prepared for 10 minutes of questions and discussion.**
    b. The project requires your team to be either employees or consultants to the enterprise that will benefit from the project.
    c. The project owner is in place before your first presentation.

d. **Your team has been notified that your project is competing with other enterprise projects for the limited funds available.**
e. **A detailed list of all the functional & non-functional requirements that your proposed "to be" system will require.**
f. **A list of the constraints**
g. **The assumptions used in defining the project.**
h. **A minimum of three (3) logical models. A model is a pictorial representation of a process, event, activity, etc. Examples are a flow chart, data flow diagram, Figures #1 through #7 in Chapter #1 in the text, etc. Functional, structural, process and behavioral diagrams can all be logical models.**
i. **The incorporation of at least one fact finding technique**
j. **On the day of the first presentation, each team will submit a printed hard copy of their presentation (with presentation notes) and a copy of their 1– 3-page paper. If a TA has been assigned to the course a copy of both the presentation (with presentation notes) and a copy of their 1 - 3-page paper must be emailed to the TA.**
k. **An end user scenario vs. a system for resale or start up / new venture. An end user means a company develops a new system to use exclusively internally. The company justifies the system, funds it and uses it to increase revenue or reduce expenses, in other words increase its profits. A system developed for resale or start up builds a system to resell it.**
l. **Each team member must present an equal portion of the presentation.**
m. **No pricing or economic feasibility analysis except in a very general "estimated target" fashion is required for this presentation.**
n. **Ensure your first presentation includes all the information requested by thorough reviewing of all the instructions provided.**

Besides a list of project requirements, you may want to use process flow charts, procedures, or policy statements to articulate your business solution. This paper will focus on user input - how it was gathered, who you selected to solicit input from and what the results were, etc. You must indicate how your project complements your enterprise's overall objectives and states the competitive advantage your project will provide. This paper will not include any specific hardware, software or pricing recommendations. If clarity requires it, you can include generic hardware and / or software and estimated "ballpark" pricing. Other clarification notes for this assignment:

o. **The feasibility analysis should not be "solution" oriented but rather requirements focused as outlined in the text.**
p. **Until all the requirements are collected & understood, an alternatives matrix with scores & weights is premature. This will be addressed in the final presentation not in the initial presentation.**
q. **Include the project's risks, scope, objectives, stakeholders, etc.**
r. **Remember requirements are logical, business centric and should be collected from the target users that would account for the "project's benefits / ROI". Also, they should be generated using terminology stakeholders understand.**

s. **The source of your requirements should be detailed.**
t. **Ensure any use cases you include are stated the way a user would describe his / her scenario of the way he /she wants to interact with the system.**
u. **Process flows should include any changes made to the existing working procedures / environment.**
v. **When the assignment mentions OO / UML, it is not referring to code but rather their use to generate logical requirements.**
w. **List all the constraints imposed by the system owner.**
x. **An "acid" test of your presentation is reviewing it to insure it is business centric, logical in nature, stakeholder requirements focused & void of either technology or a solution. (Paper #1 – Business Requirements Paper)**

4) Each team will present (using *Microsoft PowerPoint* or equivalent) their Business Requirements (Paper #1) to the class on a date assigned to you. On the day of the first presentation, each team will submit a printed hard copy of their presentation (with presentation notes) and a copy of their 1–3-page executive summary. The executive summary is a very concise summary of the complete proposal that allows a busy executive to quickly determine which parts of the proposal that they need to go through more thoroughly. If a TA has been assigned to the course a copy of both the presentation (with presentation notes) and a copy of their 1–3-page executive summary must be emailed to the TA.
5) Your final presentation will consist of an oral (Power Point presentation) and written report to your enterprise's Approval Committee that typically terminates the Design Phase of the Systems Development Life Cycle (SDLC). Keep in mind that **the Final Phase focuses on the "to be" system – what it will do, what it will consist of and how it will be built.** This presentation will restate your executive summary (which may be altered based on management feedback from your first presentation) and will also include a detailed alternatives matrix with a minimum of 3 distinctly different options detailing how the "to be" system might be built. These options can include but are not limited to building the entire system in house, outsourcing the build of the entire system, purchasing a system from vendor A & integrating it, purchasing a system from vendor B & integrating it, purchasing components of the system & completing the build in house, etc.
6) Presentation #2 will also include a fully populated alternatives matrix listing a minimum of 3 distinctly different building options with their respective scores & weights. Please refer to the text and the first few presentation slides in Chapter Six (6) for additional information.
7) The economic feasibility section of your alternative's matrix will be amplified by presenting a substantive ROI analysis for the build option you choose. This analysis will incorporate the time value of money, estimated prices, a cost / benefits analysis, and the reasons for and benefit to the enterprise for selecting the system you chose to be built or purchased.
8) In addition, you are encouraged to include possible databases, sample inputs, sample outputs and any models for the information technology solution you chose to solve the business problem you selected earlier.
9) On the date assigned for your second presentation, each team will each team will hand in a printed hard copy of their Power Point Slides and of a 5–7-page paper (350 words per page) summarizing the Project Proposal (Paper

#2) for a corporate review committee. In addition, both documents must be emailed to the course TA if one has been assigned.

Other presentation & paper requirements include:

a. **Each presentation should take no less than fifty (50) minutes and no more than sixty-five (65) minutes. In addition, be prepared for 10 minutes of questions and discussion.**
b. **The specific hardware & software for the build options you are evaluating.**
c. **A detained feasibility analysis**
d. **A completed alternatives matrix that includes a minimum of 3 distinctly different options detailing how the "to be" system might be built and an articulation of the scoring / weighting rationale you selected and how that tie back to the requirement you provided in your first presentation.**
e. **Reasonably estimated costs of the solution you selected.**
f. **A substantive ROI analysis that incorporates the time value of money, estimated prices, cost / benefits analysis and the reasons for selecting the proposed system you chose to be built or purchased.**
g. **A complete disclosure of all benefits with a detailed description of how they were monetized. Specifically, all cost reductions (i.e., staff reductions, increased productivity, more accuracy, etc.) must be explained thoroughly as well as all revenue increases (i.e., better decision making, increased customer loyalty, staff redeployment, more sales time, etc.)**
h. In addition, the paper will explain why the system you chose to build favorably competes for funding among the other alternatives that exist in your organization.
i. Each team member must present an equal portion of the presentation.
j. On the day of the presentation, each team will submit a printed hard copy of their presentation (with presentation notes) and their 5–7-page paper. (Paper #2 – Project Proposal)"
k. Your weighting and scoring values must originate & be agreed to by your stakeholders and not outside sources,
l. Insure your second presentation includes all the information requested by thoroughly reviewing all the instructions provided both in the syllabus and the first few class presentation slides of Chapter Six (6).

10) Once again, each team will present (using *Microsoft PowerPoint* or equivalent) and on the day of the presentation, each team will submit a printed hard copy of their presentation (with presentation notes) and their 5–7-page paper. (Paper #2 – Project Proposal) In addition both documents must be emailed the course TA if one has been assigned.
11) As stated above, each team will make two presentations. Your presentation should be a synopsis of the business situation you addressed, any alternatives you considered, a feasibility analysis, the business requirements resolved with your solution, the hardware, database and software recommended, sample input and output screens, the constraints you accepted, the assumptions you

made, a cost/benefit analysis and an ROI. The fluid nature of technology today dictates that there is no single "*right*" answer to your project, and you should not expect there to be one. You should be prepared to defend your presentation and respond intelligently to alternate solutions and ideas suggested by your classmates.