

# System Development Life Cycle Research Paper

## Purpose of this Assignment

This assignment gives you the opportunity to apply your research skills, analysis, and critical thinking skills to compare and contrast two different system development life cycle (SDLC) models. This will provide you an opportunity to gain an in-depth understanding of this important IT governance and management tool. This assignment specifically addresses the following course outcome:

- Identify, define, and explain the concepts of information technology governance and management.

## Assignment

You will conduct some research to learn about the Waterfall Model of SDLC and another model of your choosing. You will then describe both models and compare and contrast them. Select one of the SDLC models listed below:

- Spiral Model
- Agile (Extreme Programming) Model
- Evolutionary Prototyping Model
- Iterative and Incremental Model

Research and write a paper that describes the Waterfall Model and your chosen model. Your descriptions should include each model's purpose and structure (or characteristics) along with its strengths and weaknesses. It should describe the types of system development efforts for which it is most appropriate. Then, compare and contrast your selected model with the Waterfall Model, covering the criteria shown in Section IV below. Finally, you will document the conclusions you reached from your research, which may include such things as which model is "better," when each model should be used, whether one or the other should not be used, or whether it makes any difference which one is used. The conclusions are your own and will be assessed according to how well you defend them and how convincing your arguments are.

Your paper should be structured as follows:

- I. Introduction
- II. Waterfall Model (description, purpose, structure/characteristics, strengths and weaknesses)
- III. Chosen Model (description, purpose, structure/characteristics, strengths and weaknesses)
- IV. Comparison of the Two Models. Using the table below, choose which model is better for each of the criteria listed and explain why it is the better choice – enter your answer in the table column under the appropriate model and leave the corresponding cell for the other model blank.

Criterion	Waterfall Model	Other Model (insert name)
Ease of use		
Applicability for complex projects		
Applicability to projects of all sizes		
Encourages/allows customer involvement		
Interfaces with other systems or development projects		

- V. Conclusion (conclusions you drew from your research and analysis, including the table above on the two models).

Your paper will be graded on both the accuracy and completeness of your descriptions; it needs to clearly and completely define each model and its strengths and weaknesses. The comparisons will be graded based on the extent to which they are supported by facts and are drawn from the descriptions. The conclusions should be well justified, and drawn from the rest of the paper. Illustrations will enhance your paper if they contribute to an understanding of the model.

Your paper should be **3-5 pages** in length (not counting any cover sheet or reference pages). The use of **at least three external scholarly resources** (other than class materials) is required. You should use **scholarly journals** (rather than authorless website postings). If you need assistance with determining what a scholarly journal is, the UMUC library is a very good source of information, accessed via the following link: <http://www.umuc.edu/library/libhow/articles.cfm>. Remember to correctly cite and reference all sources using APA format.

Submit your paper in Word format via your Assignments Folder as an attached document with your last name included in the filename.

### Grading Rubric

Use the rubric below to be sure you have covered all aspects of this assignment.

Criteria	90-100% Far Above Standards	80-89% Above Standards	70-79% Meets Standards	60-69% Below Standards	< 60% Well Below Standards	Possible Points
<b>Introduction</b>	<b>5 Points</b> A sophisticated introduction sets the stage for the paper.	<b>4 Points</b> A well-written introduction sets the stage for the paper.	<b>3.5 Points</b> The introduction adequately sets the stage for the paper.	<b>3 Points</b> The introduction does not adequately set the stage for the paper.	<b>0-2 Points</b> No introduction included.	<b>5</b>

Criteria	90-100% Far Above Standards	80-89% Above Standards	70-79% Meets Standards	60-69% Below Standards	< 60% Well Below Standards	Possible Points
<b>Description of Waterfall Model</b>	<b>18-20 Points</b>  Description of waterfall model is accurate and thorough; includes description, purpose, characteristics, strengths and weaknesses; and demonstrates sophisticated understanding of course concepts.	<b>16-17 Points</b>  Description of waterfall model is correct and complete; includes description, purpose, characteristics, strengths and weaknesses; and demonstrates good understanding of course concepts.	<b>14-15 Points</b>  Description of waterfall model includes description, purpose, characteristics, strengths and weaknesses; and demonstrates adequate understanding of course concepts.	<b>12-13 Points</b>  Description of waterfall model may be incomplete, and/or may not demonstrate adequate understanding of course concepts.	<b>0-11 Points</b>  Description of waterfall model is not included or little is presented.	<b>20</b>
<b>Description of Chosen Model</b>	<b>18-20 Points</b>  Description of chosen model is accurate and thorough; includes description, purpose, characteristics, strengths and weaknesses; and demonstrates sophisticated understanding of course concepts.	<b>16-17 Points</b>  Description of chosen model is correct and complete; includes description, purpose, characteristics, strengths and weaknesses; and demonstrates good understanding of course concepts.	<b>14-15 Points</b>  Description of chosen model includes description, purpose, characteristics, strengths and weaknesses; and demonstrates adequate understanding of course concepts.	<b>12-13 Points</b>  Description of chosen model may be incomplete, and/or may not demonstrate adequate understanding of course concepts.	<b>0-11 Points</b>  Description of chosen model is not included or little is presented.	<b>20</b>
<b>Comparison of the Two Models</b>	<b>23-25 Points</b>  The comparison of the two models is clear, compelling, and directly related to the models, demonstrating a sophisticated understanding of course concepts, analysis, critical	<b>20-22 Points</b>  The comparison of the two models is clear, and is directly related to the models, demonstrating a good understanding of course concepts,	<b>17-19 Points</b>  The comparison of the two models is related to the models; demonstrates adequate understanding of course concepts, analysis, and critical thinking.	<b>15-16 Points</b>  The comparison of the two models may not be clear, may not be directly related to the models; and/or may not demonstrate adequate understanding	<b>0-14 Points</b>  Few or no comparisons are provided.	<b>25</b>

Criteria	90-100% Far Above Standards	80-89% Above Standards	70-79% Meets Standards	60-69% Below Standards	< 60% Well Below Standards	Possible Points
	thinking, and synthesis.	analysis, critical thinking, and synthesis.		of course concepts, analysis, and critical thinking.		
<b>Conclusion</b>	<b>9-10 Points</b>  Conclusion is convincing, effective and drawn from the paper. Demonstrates sophisticated analysis and critical thinking.	<b>8 Points</b>  Conclusion is effective and relevant. Demonstrates analysis and critical thinking.	<b>7 Points</b>  Conclusion is provided and is relevant.	<b>6 Points</b>  Conclusion is somewhat effective and/or relevant.	<b>0-5 Points</b>  No conclusion provided, or minimal effort demonstrated.	<b>10</b>
<b>External Research</b>	<b>9-10 Points</b>  Three scholarly sources other than the class resources are incorporated and used effectively, contextualized, appropriately researched and supported, and synthesized with original arguments. Sources used are credible, relevant, and timely. Proper APA style is used for citations and references.	<b>8 Points</b>  Three scholarly sources other than the class resources are incorporated and used effectively, appropriately researched and supported, and support original arguments. Sources used are credible, relevant, and timely. Proper APA style is used for citations and references.	<b>7 Points</b>  Three scholarly sources other than the class resources are properly incorporated and used. Uses APA format for references and citations.	<b>6 Points</b>  Three or fewer sources other than the class resources may be used; may not be scholarly sources; may not be properly incorporated or used to support arguments; may rely too heavily on the reporting of external sources, and/or are not effective or appropriate; and/or are not credible, relevant, or timely. May not use APA format.	<b>0-5 Points</b>  No external research is incorporated or reference listed is not cited within text.	<b>10</b>
<b>Format</b>	<b>9-10 Points</b>  Paper reflects effective organization and sophisticated writing; follows instructions provided; is	<b>8 Points</b>  Paper reflects effective organization; follows instructions provided; is written in third person; has few	<b>7 Points</b>  Paper has some organization; may have some errors in sentence structure, grammar and spelling. Is double spaced and	<b>6 Points</b>  Paper is not well organized, and/or contains several grammar and/or spelling errors; and/or is not double-	<b>0-5 Points</b>  Paper is extremely poorly written, has many grammar and/or spelling	<b>10</b>

<b>Criteria</b>	<b>90-100% Far Above Standards</b>	<b>80-89% Above Standards</b>	<b>70-79% Meets Standards</b>	<b>60-69% Below Standards</b>	<b>&lt; 60% Well Below Standards</b>	<b>Possible Points</b>
	written in third person; uses correct structure, grammar, and spelling; double-spaced and presented in a professional format using Word.	errors in sentence structure, grammar, and spelling; double-spaced, and presented in a professional format.	written in third person.	spaced and written in third person.	errors, or does not convey the information.	
					<b>TOTAL Points Possible</b>	<b>100</b>