

Table 1: Rubric for Team Work				
Assessment Criteria	Scaling and descriptors			
	Low (Score=1)	Need Improvement (Score =2)	Good (Score=3)	Excellent (Score=4)
<i>The team allocated resources and task clearly</i>	-Only one person contributed to tasks -Tasks were handled randomly, no clear criteria imposed.	-Half members contributed to tasks -One or two member(s) handled tasks based on their subject-strength	-Majority of members contributed to tasks completion -Most of tasks were handled by each member based on student subject-strength	-All members contributed to tasks completion -All tasks were handled by each member based on student subject-strength
<i>The team members participated and functioned effectively</i>	-Members were always late complete tasks even after constant reminder, too much unnecessary (speaking) excuses -Group meetings conducted were very minimum. -Frictions were still detected between members, and no resolution was found to resolve it	-Members were sometime late completed tasks and need constant reminders, too much speaking -Group meetings conducted were adequate -Little friction was still detected between members after trying to resolve it	-Members completed tasks on time with occasional reminders, and not many speaking - Group meetings were conducted regularly with occasional excuses -No frictions were detected at the end, after initial issues resolved	-Members always completed tasks on time without being reminded, with less speaking -Group meetings were conducted regularly at least once a week -No frictions were detected between members since the start

Table 2: Rubric for Oral Presentation				
Assessment Criteria	Scaling and descriptors			
	Low (Score=1)	Need Improvement (Score =2)	Good (Score=3)	Excellent (Score=4)
<i>The project title, topic, and objectives were clearly identified</i>	The objectives were missing and not discussed	The objectives were discussed but not stated in the presentation slides	The objectives were stated but sometimes not related to the project topic	The objective were stated and discussed clearly and highly relevant to the project
<i>A clear outline of the presentation was provided</i>	No outline (and no explanation) was provided	No outline was provided, but explanation was given	Outline was provided with little explanation	Outline was provided and discussed briefly
<i>Sufficient background information was provided</i>	No project background was given, and the presentation jumped	Background was given with minimum explanation and	Background was discussed but some information is not	Background was discussed clearly and related to the project

	directly to the content	relation with the project	needed (not related to the project)	
<i>Work tasks performed or methods used were presented</i>	No project methodology nor tasks were provided	Project methodology was provided but no steps or tasks were discussed	Project methodology was provided and project execution was distributed into few tasks	Project methodology was provided and project execution was distributed into several tasks
<i>Information was presented in a logical and well-organized manner</i>	Presentation flows were not logical and it was arranged randomly from slide-to-slide	Presentation flows were logical for some sections, and some slides were not in order	Presentation flows were logical smooth and only few slides were not in order	Presentation flows were logical and smooth from slide-to-slide, and it was organized well
<i>The presentation was audible, well-paced, and well-articulated</i>	The presentation was given with low/unclear voice, not confidence, too many English mispronunciations, too slow or too quick, and not articulated	The presentation was given with acceptable English presentation with few mispronunciations, well-paced, and well-articulated	The presentation was given with strong and confident voice in standard oral English communication with minimum mispronunciation, well-paced, and well-articulated	The presentation was given with strong and confident voice in standard English oral communication with no mispronunciation, well-paced, and well-articulated
<i>Any major constraints, problems, or challenges were discussed</i>	No discussions were provided about any major constraints, problems, or challenges	Any major constraints, problems, or challenges were mentioned without justifications/explanations	Any major constraints, problems, or challenges were mentioned with adequate explanations/justifications	Any major constraints, problems, or challenges were mentioned with strong explanations/justifications
<i>Conclusions and recommendations were clear and drawn from findings</i>	Presenters concluded the project based on unrelated findings and no recommendations were given	Presenters concluded the project and gave recommendations based on weak findings	Presenters concluded the project and gave recommendations based on key findings	Presenters clearly concluded the project and gave recommendations based on key findings
<i>Presentation slides were clear, concise, and attractive</i>	-All fonts used were too small and unreadable, some pictures/diagrams were too small or unclear -Used too much wording -Used slide background that created unreadable contents	-Most of fonts and pictures used were unreadable -Used sometime too much wording -Used unattractive slide background, but contents were still readable	- Most of fonts and pictures used were readable -Most of wording used were concise -Used normal slide background with readable contents	-Fonts were readable, all pictures/diagrams were clear -Used clear and concise wording -Used attractive slide background with readable content
<i>Presentation slides were supported with pictures,</i>	The presentation had no pictures, no diagrams, no tables	No adequate pictures, diagrams, and tables were	Pictures, diagrams and tables were used to support presentation	Pictures, diagrams and tables were used efficiently to support presentation

<i>diagrams, and tables</i>		given to support presentation		
<i>Presentation slides were supported with animations and/or video clips</i>	No animation was provided at all	Animation was provided using simple/basic scheme	Animation was provided using video clips	Attractive animation using concise video clips were provided
<i>The team demonstrated professional attitude, appearance, and body language</i>	-The presenters spoke erratically due to lack of knowledge of the project -Professional looks were not practiced by all members (e.g. wearing casual attire)	-The presenters sometime spoke nervously due to lack of knowledge on the project -Professional looks were not practiced by some members (via e.g. wearing casual attire)	-The presenters spoke confidently based on knowledge of the project -Adequate Professional looks were practiced (via e.g. wearing business attire)	- The presenters spoke confidently based on strong knowledge of the project -Good professional looks were practiced (via e.g. wearing business attire)
<i>Team members cited references and acknowledged help/support received from others</i>	No project references were given, and no supports/assistants were needed	Small number of project references were cited, and no supports/assistant were needed	Adequate project references were cited, and proper credits or acknowledgments were given to others who assisted the team	Significant numbers of project references were cited, and proper credits or acknowledgments were given to others who assisted the team
<i>Team members responded positively and professionally to criticisms/suggestions/comments</i>	Team members were all the time defensive (not open) responding to criticisms/comments	Team members were defensive responding to criticisms/comments	Most of the time team members responded positively and professionally to criticisms/comments	Team members always responded positively and professionally to criticisms/comments
<i>The team allocated resources and task clearly</i>	Only one member was very active delivering the presentation including answering questions	One to two members evenly took part delivering the presentation including answering questions	Majority of the members evenly took part delivering the presentation including answering questions	All members evenly and actively took part delivering the presentation including answering questions and assisting others when they were needed
<i>Transitions and rapport between team members were strong</i>	Transitions and rapport between team members were not smooth	Transitions and rapport between team members were not that strong	Transitions and rapport between team members were adequate	Transitions and rapport between team members were strong
<i>Team members participated and functioned effectively</i>	Only one member participated in the presentation including in the Q&A session, and some responses to Q&A were not uniform amongst them	Most of the members participated in the presentation including in the Q&A session, but responses to Q&A were non uniform amongst them	Most of the members participated in the presentation including in the Q&A session, and responses to Q&A were strong and uniform	All members participated in the presentation including in the Q&A session, and responses to Q&A were strong and uniform

Table 3: Rubric for Written Report

Assessment Criteria	Scaling and descriptors			
	Low (Score=1)	Need Improvement (Score =2)	Good (Score=3)	Excellent (Score=4)
<i>Report was developed using standard technical report</i>	The report was written not in accordance to standard technical report, some of the key contents mentioned here were missing or not covered (Cover Page, Acknowledgements, Table of Contents, List of Tables, List of Figures, Executive Summary, Introduction, Background & Objectives, Design Methods, Chapters of design parts and components, Conclusions & Recommendation, References, Appendices)	The report was written using standard technical report, but few key contents mentioned here were missing (Cover, Acknowledgements, Table of Contents, List of Tables, List of Figures, Executive Summary, Introduction, Background & Objectives, Design Methods, Chapters of design parts and components, Conclusions & Recommendation, References, Appendices)	The report was written using standard technical report with the following contents: Cover, Acknowledgements, Table of Contents, List of Tables, List of Figures, Executive Summary, Introduction, Background & Objectives, Design Methods, Chapters of design parts and components, Conclusions & Recommendation, References, Appendices	The report was written using standard technical report with the following well-arranged contents: Cover, Acknowledgements, Table of Contents, List of Tables, List of Figures, Executive Summary, Introduction, Background & Objectives, Design Methods, Chapters of design parts and components, Conclusions & Recommendation, References, Appendices
<i>Main body of report was well organized in sections and sub-sections</i>	No numbering systems were provided for sections and subsections	Numbering systems were provided but not consistently (e.g. mix numeral and alphabetical numbering)	Numbering systems were provided for most of sections and subsections	Numbering systems were provided consistently using numeric system
<i>Figures, tables, graphs, and drawing were well quoted and presented</i>	Figures, tables, graphs, and drawing were not good quality and they are not quoted in the body part of the report	Figures, tables, graphs, and drawing were acceptable but not all quoted in the report	Figures, tables, graphs, and drawing were presented in good quality and they are quoted/discussed in the body part of the report	Figures, tables, graphs, and drawing were all presented in good quality and quoted/discussed clearly in the body part of the report
<i>Mathematical equations were presented in clarity and explanations are provided</i>	All formula (equations) were given without explanations	Most of formula were presented with explanations, but some were still unclear	Most of formula (equations) were presented with detail explanations given	All formula (equations) were presented with detail explanations given

<i>English languages were well imposed</i>	-Words were not chosen properly -Sentences and paragraphs did not flow smoothly -They were too many grammatical and misspelling mistakes -Engineering jargons and terms were not explained	-Words were not chosen appropriately -Most of sentences and paragraphs did not flow smoothly -A lot of grammatical mistakes and misspelling were found -Only few engineering jargon and terms were explained	-Most of words were chosen appropriately -Majority of sentences and paragraph flowed smoothly -Only few grammatical mistakes and misspelling were found -Majority of engineering jargons and term were explained	-Words were chosen appropriately -Paragraphs and sentences flowed smoothly -No grammatical mistakes and misspelling were found -All engineering jargon and terms were clearly explained
<i>Project objectives and scopes were clearly stated</i>	Project objectives and scopes (limitations) were not included	Project objectives and scopes (limitations) were stated with no detailed discussions provided	Project objectives and scopes (limitations) were stated with discussions provided	Project objectives and scopes (limitations) were clearly stated with detailed and thorough discussions provided
<i>Project methodology was clearly discussed</i>	No project methodology was discussed	Project methodology was mentioned but no further was provided	Project methodology was discussed with justifications provided	Project methodology was clearly discussed with thorough justifications provided
<i>Engineering design principles were used for optimum solutions</i>	Engineering design principles were not used for optimum solutions	Engineering design principles were used for optimum solutions but no clear justifications were given	Engineering design principles were used for optimum solutions with justifications and discussion given	Engineering design principles were used for optimum solutions with clear justifications and discussion given
<i>Design standards and specifications were used</i>	No design standards and specifications were applied.	Only one or two applicable design standards and specifications were applied	Adequate applicable design standards and specifications were applied	Adequate applicable design standards and specifications were applied and discussed to assist project guidance
<i>Constraints considering public health, safety, and welfare as well as global, cultural, social, and environmental, and economic factors were imposed in the project</i>	No constraints were imposed with no explanations why applicable constraints not used	Only one or two constraints were imposed with no explanations why other applicable constraints not used	Majority of constraints were imposed and discussed clearly in the report	All constraints were imposed and discussed clearly in the report

<i>Design alternative(s) was provided and verified against the constraints</i>	Design alternative(s) was not provided at all	Design alternative(s) was provided but not verified against the constraints	Design alternative(s) was provided and verified against few constraints	Design alternative(s) was provided and verified against most of applicable constraints
<i>Modern engineering design software and/or tools were used and applied for finding optimum design solutions</i>	No modern engineering software/tools were used in the project design	The teams used modern engineering software/tools, but not used the to optimize design solution (i.e. just for demonstration)	The teams used one modern engineering software/tools in optimize design solution	The teams used more than two modern engineering software/tools in optimize design solutions
<i>Literature surveys and/or past project experience were discussed in the project</i>	No literature survey and no past project references were discussed in the project	The team surveyed minimum numbers of relevant literatures/references and minimum reviews were given in relation to the project	The team surveyed adequately relevant literatures/references and reviewed them in relation to the project	The team surveyed significant numbers of relevant literatures/references and reviewed them in relation to the project