



City Essay Rubric

0
No Points
Requirements missing.

1
Poor
Poor–Fair quality. Fulfills less than 50% of requirements.

2
Good
Average–Above average quality. Fulfills at least 85% of requirements.

3
Excellent
Excellent quality. Fulfills 100% of requirements with additional distinctive features.

I. Introduce City and Define the Problem (15 Points)	0	1	2	3
1. City overview <ul style="list-style-type: none"> Basic city information: population, age, location Characteristics: community and cultural preferences, development, economy, etc. 	No description of city.	Underdeveloped description of city.	Clear and developed description of city.	Clear and thoroughly developed description of city.
2. Infrastructure <ul style="list-style-type: none"> Types of infrastructure could include housing, transportation, energy, pollution control, and others 	No description of city infrastructure.	Description of one type of city infrastructure.	Clear description of two different types of city infrastructure.	Clear and thorough description of two or more types of city infrastructure.
3. City services <ul style="list-style-type: none"> Types of city services could include: education, healthcare, fire, police, etc. 	No description of city services.	Description of one type of city services.	Clear description of two different types of city services.	Clear and thorough description of two or more types of city services.
4. City innovations and futuristic elements	No description of innovations and futuristic elements.	Underdeveloped description of innovations and futuristic elements.	Clear and developed description of innovations and futuristic elements.	Clear and thoroughly developed description of innovations and futuristic elements.
5. Innovative ways the city is addressing resiliency in areas beyond the power grid <ul style="list-style-type: none"> Focus areas could be housing, transportation, healthcare, etc. 	No description of resiliency plans beyond the power grid.	One underdeveloped example of resiliency planning beyond the power grid.	One clear and developed example of resiliency planning beyond the power grid.	Two or more clear and developed examples of resiliency planning beyond the power grid.
II. Specs and Solution (21 Points)	0	1	2	3
6. Describe the selected natural disaster and impact on city <ul style="list-style-type: none"> Realistic threat (based on location, geography) Impact on health & safety of vulnerable population groups Short-term and potential long-lasting effects of disaster Vulnerabilities of traditional electric grids 	No description of natural disaster or potential impact on city. Or disaster is not a realistic threat given the city's location, geography.	Underdeveloped description of natural disaster. Touched on disaster's threat, its short- and long-term effects.	Clear and developed description of disaster. Clearly states disaster's threat, its short- and long-term effects on city and traditional electric grid.	Clear and thoroughly developed description of disaster. Thoroughly details disaster's threat, its short- and long-term effects on city and traditional electric grid.
7. Describes the future city's power grid infrastructure <ul style="list-style-type: none"> Generation, transmission, distribution, storage, monitoring and technology 	No discussion.	Underdeveloped description of power grid.	Clear and developed description of power grid.	Clear and thoroughly developed description of power grid.



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II. Specs and Solution (21 Points) (Continued)	0	1	2	3
8. Describes two innovative ways the grid can withstand and recover from the disaster. <ul style="list-style-type: none"> Utilizes innovative and futuristic technology 	No solutions or discussion of innovative technology.	Description of one or more solutions. Technology not particularly innovative.	Clearly outlines two solutions and innovative technology.	Clear and thorough description of two solutions and innovative technology.
9. Resiliency assessment and plans <ul style="list-style-type: none"> Conditions that can cause failure/damage Ability to identify & repair damage A best- and worst-case scenario for restoring power 	No description.	Limited assessment of conditions and ability to identify & repair damage.	Clear assessment of conditions and ability to identify & repair damage. Includes a best- and worst-case scenario.	Clear and thorough assessment of conditions, ability to identify & repair damage, and best- and worse-case scenario.
10. Describes solutions' benefits to citizens <ul style="list-style-type: none"> How will the grid help keep residents safe and happy? 	No description.	Underdeveloped description.	Clear and developed description of benefits.	Clear and thoroughly developed description of benefits.
11. Risks, tradeoffs & compromises <ul style="list-style-type: none"> Benefits, drawbacks, risks Tradeoffs & compromises 	No discussion of benefits, risks, or tradeoffs.	Description of one benefit, risk, or tradeoff.	Description of more than one benefit, risk, or tradeoff.	Description of more than two benefits, risks, or tradeoffs.
12. Engineering disciplines involved and role of 1-2 engineers	Engineering disciplines are not identified.	Description of one engineering discipline or role of one engineer.	Clear description of more than one engineering discipline and role of engineers.	Clear and detailed description of more than one engineering discipline and role of the engineers.
III. Judge Assessment of Solution (12 Points)	0	1	2	3
13. Effectiveness and quality of solution <ul style="list-style-type: none"> Effective solutions for quick, efficient recovery from chosen disaster Appropriate design and application of technology Ensures citizen safety and health 	Not effective.	Solution is somewhat effective. Technology and design need improvement. Questionable ability to ensure citizen safety and health.	Solution is effective, but technology and design could be improved; good ability to ensure citizen safety and health.	Solution is highly effective, with excellent technology application; excellent ability to ensure citizen safety and health.

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Appendix:
Deliverables
City Essay

III. Judge Assessment of Solution (12 Points) (Continued)	0	1	2	3
14. Innovative and futuristic solutions <ul style="list-style-type: none"> Reasonable extrapolation and application of technology Degree to which solution involves engineering 	Not innovative or original.	Somewhat original or innovative. Not futuristic. Little engineering involved.	Solution is moderately innovative, original or futuristic. Some engineering involved.	Solution is highly innovative, original and futuristic. Extensive engineering involved.
15. Plausibility of solutions <ul style="list-style-type: none"> Based on sound scientific principles 	Implausible or not scientifically sound.	Solution is not very plausible (science fiction).	Solution is plausible.	Solution is highly plausible and scientifically sound.
16. Tradeoffs & compromises <ul style="list-style-type: none"> Accounting for risks, benefits Assessing consequences and making logical decisions 	Does not explore tradeoffs.	Some consideration of tradeoffs, but ignores major issues.	Adequate assessment of tradeoffs. Analysis and decisions could be improved.	Excellent assessment of risk, benefits, tradeoffs in decision-making process.
IV. Writing Skills (12 Points)	0	1	2	3
17. Organization	Poorly organized	Fair organization	Good organization	
18. Writing skills	Poor writing	Fair writing	Good writing	
19. Grammar & spelling	Many errors	Some errors	Few, if any, errors	
20. Maximum number of graphics <ul style="list-style-type: none"> If used, max of 4 (does not include tables) 	Exceeds maximum of 4 graphics, illustrations		Does not exceed maximum of 4 graphics and/or illustrations	
21. List of references <ul style="list-style-type: none"> At least three acceptable references Wikipedia is not recognized as an acceptable reference 	No references	Less than three acceptable references	At least three acceptable references	
22. Word count <ul style="list-style-type: none"> Does not include title or references 	No word count at end of document or inaccurate count		Accurate word count at end of document	