

# Feeding Future Cities Research Essay Rubric

0	1	2	3
<b>No Points</b> Requirements missing.	<b>Poor</b> Poor–Fair quality. Fulfills less than 50% of requirements.	<b>Good</b> Average–Above average quality. Fulfills at least 90% of requirements.	<b>Excellent</b> Excellent quality. Fulfills 100% of requirements with additional distinctive features.

I. DEFINE THE PROBLEM (6 POINTS)	0	1	2	3
<b>1. Describe city &amp; agricultural capabilities</b> <ul style="list-style-type: none"> <li>Introduce city: location, geography, development, etc.</li> <li>Factors affecting agriculture: geographic, demographic, climatological, cultural, etc.</li> </ul>	No description of city or agricultural factors.	Brief description of city and agricultural factors.	Good description of the city, its agricultural capability, and the factors that affect it.	Detailed description of city, its agricultural capability, and the factors that affect it.
<b>2. Describe urban agriculture needs and resources</b> <ul style="list-style-type: none"> <li>Food needs of city/citizens</li> <li>Resources the city can devote to agriculture</li> </ul>	No description of needs or resources.	Brief description of needs or resources.	Good description of needs or resources.	Detailed description needs or resources.
II. SPECS AND SOLUTION (15 POINTS)	0	1	2	3
<b>3. Describe the solution</b> <ul style="list-style-type: none"> <li>Crops and why they were chosen</li> <li>Urban farm environment and resources</li> <li>Considerations throughout the agricultural cycle</li> </ul>	No description of solution.	Brief description of solution.	Good description of the solution.	Excellent description of solution.
<b>4. Describe technology and infrastructure required</b> <ul style="list-style-type: none"> <li>Describe technology involved</li> <li>Discuss infrastructure required</li> </ul>	No description of technology or infrastructure.	Brief description of technology or infrastructure.	Good description of the technology or infrastructure.	Excellent description of technology or infrastructure.
<b>5. Discuss key elements</b> <ul style="list-style-type: none"> <li>Light, climate, air quality, space, water, soil, and nutrients</li> </ul>	No discussion of key elements.	Some discussion of key elements.	Good discussion of key elements.	Excellent discussion of key elements.
<b>6. Energy efficiency</b> <ul style="list-style-type: none"> <li>Explain how the solution is energy efficient</li> </ul>	No discussion of energy efficiency.	Some discussion of energy efficiency.	Good discussion of energy efficiency.	Excellent discussion of energy efficiency.
<b>7. Risks, benefits and tradeoffs</b> <ul style="list-style-type: none"> <li>Consider risk areas such as: environmental factors, location, chemicals, air quality, waste, and recycling</li> <li>Discuss benefits that urban farming and this solution bring to city and citizens</li> </ul>	No consideration of risks and benefits.	Brief description of at least one risk and benefit.	Good description of potential risk areas and benefits of the solution.	Excellent description of risks and the benefits of this solution.
III. UNDERSTAND ENGINEERING ROLES (6 POINTS)	0	1	2	3
<b>8. Engineering disciplines involved</b>	Engineering disciplines are not identified.	One engineering discipline is identified.	More than one engineering disciplines are identified.	More than one engineering disciplines are discussed.
<b>9. Identify role of engineer most crucial to project</b>	No discussion of engineer role most useful to solution.	Brief discussion of at least one engineer role most useful to solution.	Good discussion of 1–2 engineers most useful to solution.	Excellent discussion of at least two engineers most useful to solution.

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**Good**  
Average—Above average quality. Fulfills at least 90% of requirements.

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

<b>IV. JUDGE ASSESSMENT OF SOLUTION (15 POINTS)</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>10. Effectiveness of solution in meeting requirements</b> <ul style="list-style-type: none"> <li>Selection of crops meets needs of citizens</li> <li>Clever design and application of technology</li> <li>Accounts for key elements: light, climate, air quality, space, water, soil, and nutrients</li> </ul>	Not effective.	Solution is fairly effective, but both crop choice and technology design can be better.	Solution is effective, but either crop choices or technology design could be improved.	Design is a highly effective, with good choice of crops and excellent technology design that accounts for all key elements.
<b>11. Effectiveness of solution in conserving energy (energy efficiency)</b>	Not effective.	Solution is fairly effective.	Solution is effective, but could be better.	Design is a highly effective in conserving or even generating energy.
<b>12. Innovative and futuristic solution</b>	Not innovative or original.	Somewhat original or innovative. Not futuristic.	Solution is innovative, original and somewhat futuristic.	Solution is highly innovative, original and futuristic.
<b>13. Plausibility of solution</b> <ul style="list-style-type: none"> <li>Based on sound scientific principles</li> </ul>	Implausible or not scientifically sound.	Solution is not very plausible (science fiction).	Solution is somewhat plausible.	Solution is highly plausible and scientifically sound.
<b>14. Accounting for identified risks, maximizing benefits (tradeoffs)</b>	Does not account for identified risks, or no risks identified.	Partially accounts for risks. Ignores major issues.	Adequately accounts for risks. Could be better.	Solution accounts for and minimizes all identified risks.
<b>V. WRITING SKILLS (18 POINTS)</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>15. Organization</b>	Poor organization.	Fair organization.	Good organization.	Excellent organization.
<b>16. Writing skills</b>	Poor writing.	Fair writing.	Good writing.	Excellent writing.
<b>17. Grammar</b>	Many errors.	Some errors.	Very few errors.	No errors.
<b>18. Spelling</b>	Many errors.	Some errors.	Very few errors.	No errors.
<b>19. Maximum number of graphics</b> <ul style="list-style-type: none"> <li>If used, max of four (does not include tables)</li> </ul>	Exceeds maximum of 4 graphics, illustrations.			Does not exceed maximum of 4 graphics and/or illustrations.
<b>20. List of references</b> <ul style="list-style-type: none"> <li>At least three acceptable references</li> <li>Wikipedia not recognized as an acceptable reference</li> </ul>	No references.	Less than three acceptable references.		At least three acceptable references.