**Data Analysis and Visualization Guide and Rubric**

**What to include?**

* Citation of data source
* Shapefiles, csv files, or codes shared through OneDrive or GitHub
* A word document includes a description of the data analysis procedures (text and workflow chart), figures with captions, and a brief interpretation of your maps or results.

**Marking Rubric (Total points: 24):**

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| --- | --- | --- | --- | --- |
|  | Excellent (3-4) | Good (2-3) | Meet Criteria (1-2) | Poor (0-1) |
| Description of Data Collection and Analysis  (4 points) | Indication of proper use of data collected and proof of reading the metadata. All data analysis procedures are documented in concise and accurate language so that someone else can repeat your work. Appropriate vocabulary or technical terms are used. Reasoning behind why you choose such procedure is justified. | Indication of proper use of data collected and proof of reading the metadata. All data analysis procedures are documented in concise and accurate language so that someone else can repeat your work. Appropriate vocabulary or technical terms are used. | Indication of proper use of data collected and proof of reading the metadata. All data analysis procedures are documented so that someone else can repeat your work. | Improper use of data. Did not read metadata. Some procedures are missing or not described accurately. |
| Workflow Charts  (4 points) | Your methods and procedures are presented in a single flow chart. For each geoprocess, the model is built, and your workflow chart is clearly displayed (with input, geoprocessing tools and output). | Your methods and procedures are presented in a single flow chart. For some geoprocesses, the model is built, and your workflow chart is clearly displayed (with input, geoprocessing tools and output). | Your methods and procedures are presented in a single flow chart. | The flow chart is not clear or not provided. |
| Map Elements  (4 points) | Title is concise and adequately describe the map. Scale bar use appropriate measurement units. A border line and North arrow are included. Legends should be clear as to what they are describing. Cite the data source, provide the Datum and Projection, and add your name underneath the border line. | All elements are included. Appropriate choices were made. However, title is not concise or not adequately describe the map. Or legends were not clear. | All elements are included, but some of them were not optimal (for example, title is not concise, or scale bar did not choose an appropriate measurement units). | Some elements are missing. |
| Map Aesthetics  (4 points) | The data takes up the majority of the area, no excessive white space. Scale bar is of appropriate size/length. North arrow is visible but not distracting. Text should be readable and not cross other text or other features of the SAME color. The use of size or color visually indicate relative importance, communicate similarities, differences, and relationships. | All elements are positioned appropriately. No excessive white space. A proper color scheme is used. Elements are of proper size. | All elements are positioned appropriately. No excessive white space. However, improvements in color scheme or sizes can be made. | Some of the criteria not met. |
| Figures and Captions  (4 points) | Figures are included in the word document; captions are right below each figure. Captions should be standalone texts that are concise and accurately describes the figure, so that readers does not need to refer to the main text to understand the figure. Shapefile of the figures are documented on medusa course folder. | Figures and captions are provided. Captions should be standalone texts that are concise and accurately describes the figure, so that readers does not need to refer to the main text to understand the figure. Shapefile of the figures are documented on medusa course folder. | Figures and captions are provided. Captions are concise and accurately describes the figure. Shapefile of the figures are documented on medusa course folder. | Some figures or captions missing. Captions does not accurately describe the figures. Shapefiles not documented on medusa. |
| Result Interpretation  (4 points) | All figures are interpreted. The interpretation is concise and adequately describes the results. It is connected with the problems addressed and the goals or objectives targeted. Explanation is provided where necessary. | All figures are interpreted. The interpretation is concise and adequately describes the results. It is connected with the problems addressed and the goals or objectives targeted. | All figures are interpreted. The interpretation is concise and adequately describes the results. | Some interpretation is missing. The interpretation does not match with the results shown in the figure or is very vague. |

\* \* Projects that are not based on sound methods or do not meet mentors’ expectations will receive grades that is no higher than 50%