| RUBRIC FOR IMPLEMENT | | | | | |
|---|---|---|---|---|---|
| **Lab Computational Skills** | | Missing | Inadequate | Needs improvement | Near Mastery |
| | | 0 | 1 | 2 | 3 |
| **I1** | **Students are able to write Python codes to manipulate, analyse, and visualise data sets.** | Most Python codes to manipulate, analyse or visualise datasets are missing or not working. | Several Python codes to manipulate, analyse or visualise datasets are missing or not working. | A few Python codes to manipulate, analyse and visualise datasets are missing or not working. | Almost all Python codes to manipulate, analyse and visualise datasets are implemented and working. |
| **I2** | **Students are able to write Python codes to implement computational methods to find solutions.** | Most Python codes to implement computational methods to find solutions are missing or not working. | Several Python codes to implement computational methods to find solutions are missing or not working. | A few Python codes to implement computational methods to find solutions are missing or not working. | Almost all Python codes to implement computational methods to find solutions are missing or not working. |

| RUBRIC FOR COMMUNICATE | | | | | |
|---|---|---|---|---|---|
| **Lab Computational Skills** | | Missing | Inadequate | Needs improvement | Near Mastery |
| | | 0 | 1 | 2 | 3 |
| **C1** | **Students are able to communicate clearly their work using Jupyter Notebooks (JN), being able to integrate images, texts, and codes in a JN.** | The explanatory text in the Markdown cell is missing, the results are not commented in the text and the features of Jupyter Notebook are not used. | The explanatory text in the Markdown is minimal and unclear, with very few comments on the results. Some features of Jupyter Notebook are used, but not effectively (e.g., images or code are not integrated well with the text). | The explanatory text in the Markdown is present. The results are commented, but the connections between text, code, and visualizations are not always clear. Some Jupyter Notebook features are used but improvements could be made. | The explanatory text in the Markdown cells is clear and detailed, with comments on the results that are easy to follow. Students effectively use Jupyter Notebook's features, integrating images, text, and code seamlessly. |
| **C2** | **Students are able to write clear, well-commented Python codes** | Most Python codes are not commented (neither as text in the Markdown cell nor with inline comments) | Several Python codes are not commented, and the comments provided are not clear. | A few Python codes are not commented or the comments provided are not clear. | Almost all Python codes are commented and clear. |
| **C3** | **Students are able to create clear, informative and complete graphs using Python.** | The graphs miss all necessary information such as axes' labels, units and legends and graphs are not readable (for example font size is too small, the data points are not well visible due to scaling choices etc.) | The graphs miss some important information (e.g., incomplete labels, missing units, or unclear legends) or the readability of the graphs is compromised by poor formatting choices | The graphs contain most of the necessary information (axes labels, units, and legends), but there may be minor omissions. The graphs are readable, but the presentation may not be fully polished. | The graphs are clear, complete, and informative, with all necessary details included (e.g., well-labeled axes, units, legends, and experimental points). The formatting is excellent, making the graphs easy to read and understandable. |