

### Assignment 3 – Visualization Rubric

General Expectations (apply across all items):

- Code runs without errors; plots render.
- Proper axis labels, titles, and legends.
- Appropriate ggplot2 geoms/mappings.
- Consistent diagnosis coloring.
- Minor deductions (max -0.5 overall): missing labels (-0.1 each), unreadable text (-0.1), wrong variable names (-0.1 each), non-reproducible code (-0.2).

| Question                                 | Criteria  | Points |
|--|---|--------|
| <b>1. Aesthetics in ggplot() vs geom</b> | Explains inheritance/overrides; example with global aes() and layer-specific aesthetics.<br>Partial: correct idea but vague/incorrect example.<br>Mentions redundancy but confused.<br>Missing/incorrect.                       | 0.5    |
| <b>2. Bar plot vs Histogram</b>          | Correct difference (categorical vs continuous) + histogram chosen for heights with rationale.<br>Partial: histogram chosen but weak reasoning.<br>Incorrect choice or rationale.  | 0.5    |
| <b>3a. Mean radius by Diagnosis</b>      | Justification (continuous across groups → violin/boxplot). Correct plot with labels/titles.<br>Correct plot but weak justification/labels.<br>Suboptimal plot (e.g., bar with means) with justification.<br>Wrong plot/missing. | 1.0    |
| <b>3b. Smoothness vs Compactness</b>     | Justification (two continuous vars → scatter). Correct scatter plot with labels.<br>Correct plot, thin justification/minor issues.<br>Less appropriate plot (e.g., hexbin) or missing labels.                                   | 1.0    |

|  |   |     |
|--|---|-----|
|  | Wrong/missing.  |     |
| <b>3c. Violin plots (radius + texture by Diagnosis, faceted)</b> | <p>Data wrangled long. Correct violin + facet_wrap. Labels included.</p> <p>Plot correct but wrangling incomplete/minor labeling issues.</p> <p>Facets attempted but wrong format/mapping.</p> <p>Wrong geom, no facets but some attempt.</p> <p>Missing/incorrect.</p>       | 1.5 |
| <b>3d. 9-panel histograms of mean features</b>                   | <p>Data wrangled long. 9 histograms faceted by feature, colored by Diagnosis, scales=free_x.</p> <p>Small miss (e.g., 8/9 vars or forgot free_x).</p> <p>Facets present but wrong geom/missing colors.</p> <p>Partial attempt, multiple issues.</p> <p>Missing/incorrect.</p> | 1.5 |