BCB744 Biostatistics Exam – Assessment Template

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# Student Information

* **Student Name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* **Student ID:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# I. Task-by-Task Assessment & Scoring

## Task 1: Initial Processing (Weight: 10%)

**Components:**

* **1.1: Reading NetCDF**
* **1.2: Restructuring Data**

**Scoring Scheme (per component):**

* Correct output shown: **assign 100**
* Penalty: Incorrect variable naming (max -30): \_\_\_\_\_
* Penalty: Poor presentation or formatting (max -20): \_\_\_\_\_

Task Summary:

* **Average Task 1 Raw Score (0–100):** \_\_\_\_\_
* **Task 1 Weighted Score (/10):** \_\_\_\_\_
* **Final Task 1 Score (× 0.10):** \_\_\_\_\_

**Narrative Feedback (Task 1):**

## Task 2: Exploratory Data Analysis (Weight: 10%)

### Component 2.1: Weighted Mean Time Series (Two Parts)

* 1. Correct summary plot for weighted mean time series: **assign 35**
  + Penalty: Missing year × quarter aggregation (max -10): \_\_\_\_\_
  + Penalty: No exclusion of passes = 0 or area = NA (max -10): \_\_\_\_\_
  + Plot correctness: **assign 15**
  + Penalty: Poor formatting (max -10): \_\_\_\_\_
  1. Correct pixel-level temporal analysis: **assign 35**
  + Penalty: Fewer than 100 samples (max -10): \_\_\_\_\_
  + Penalty: Missing year × quarter × pixel structure (max -10): \_\_\_\_\_
  + Plot correctness: **assign 15**
  + Penalty: Poor formatting (max -10): \_\_\_\_\_

**Component 2.1 Score (0–100):** \_\_\_\_\_

### Component 2.2: Summary Statistics & Visualisations

* 1. Statistical summaries: **assign 50**
  + Penalty: Incorrect grouping (max -15): \_\_\_\_\_
  + Interpretation quality: (max 20): \_\_\_\_\_
  1. Plotting: **assign 30**
  + Penalty: Poor formatting (max -20): \_\_\_\_\_

**Component 2.2 Score (0–100):** \_\_\_\_\_

### Component 2.3: Observation Density Map

* Plot correctness: **assign 100**
  + Penalty: Poor formatting (max -50): \_\_\_\_\_

**Component 2.3 Score (0–100):** \_\_\_\_\_

**Task Summary:**

* **Average Task 2 Raw Score (0–100):** \_\_\_\_\_
* **Task 2 Weighted Score (/10):** \_\_\_\_\_
* **Final Task 2 Score (× 0.10):** \_\_\_\_\_

**Narrative Feedback (Task 2):**

## Task 3: Inferential Statistics – Part I (Weight: 20%)

### Components:

* **3.1: Hypothesis Structure:** Raw Score: \_\_\_\_\_
* **3.2: Model Choice & Implementation:** Raw Score: \_\_\_\_\_
  + *Penalty: Overcomplication not justified (e.g., unmotivated LMMs):* \_\_\_\_\_
* **3.3: Justification & Assumptions:** Raw Score: \_\_\_\_\_
* **3.4: Interpretation & Presentation:** Raw Score: \_\_\_\_\_
  + *Penalty: Poor writing or code/text blending:* \_\_\_\_\_

**Task Summary:**

* **Average Task 3 Raw Score (0–100):** \_\_\_\_\_
* **Final Task 3 Score (× 0.20):** \_\_\_\_\_

**Narrative Feedback (Task 3):**

## Task 4: Assigning Kelp Observations (Weight: 20%)

### Components:

* **4.1: Coastal Sections Assignment** (70% of Task 4): Raw Score: \_\_\_\_\_
* **4.2: Biogeographical Provinces Assignment** (30%): Raw Score: \_\_\_\_\_

**Weighted Average Task 4 Score:**

* ( + ): \_\_\_\_\_

**Final Task 4 Score (× 0.20):** \_\_\_\_\_

**Narrative Feedback (Task 4):**

## Task 5: Inferential Statistics – Part II (Weight: 30%)

### Components:

* **5.1: Section-wise Differences**: Raw Score: \_\_\_\_\_
  + Bonus: TukeyHSD (+5): \_\_\_\_\_
  + Penalty: Overcomplicated method (e.g., unmotivated LMM): \_\_\_\_\_
* **5.2: Province-wise Differences**: Raw Score: \_\_\_\_\_
  + Bonus: TukeyHSD (+5): \_\_\_\_\_
  + Penalty: Overcomplicated method: \_\_\_\_\_
* **5.3: Interaction (Section × Province):** Raw Score: \_\_\_\_\_
  + Penalty: Overcomplicated method: \_\_\_\_\_
* **5.4: Temporal Trend by Province:** Raw Score: \_\_\_\_\_
  + Penalty: Overcomplicated method: \_\_\_\_\_
* **5.5: Seasonal Variability across Provinces:** Raw Score: \_\_\_\_\_
  + Penalty: Overcomplicated method: \_\_\_\_\_

**Task Summary:**

* **Average Task 5 Raw Score (0–100):** \_\_\_\_\_
* **Final Task 5 Score (× 0.30):** \_\_\_\_\_

**Narrative Feedback (Task 5):**

## Task 6: Final Write-up (Weight: 10%)

**Scoring Scheme:**

* **Clarity & Communication** (report organisation, flow, language): \_\_\_\_\_ /70
* **Critical Thinking** (limitations, implications, insight): \_\_\_\_\_ /30
* **Penalty:** AI-generated text (-50%) or similar issues: \_\_\_\_\_

**Total Task 6 Score (after deductions):** \_\_\_\_\_  
**Final Task 6 Score (× 0.10):** \_\_\_\_\_

**Narrative Feedback (Task 6):**

# II. Final Mark Calculation

| Task | Weighted Score |
| --- | --- |
| Task 1 | \_\_\_\_\_ / 10 |
| Task 2 | \_\_\_\_\_ / 10 |
| Task 3 | \_\_\_\_\_ / 20 |
| Task 4 | \_\_\_\_\_ / 20 |
| Task 5 | \_\_\_\_\_ / 30 |
| Task 6 | \_\_\_\_\_ / 10 |
| **Subtotal** | \_\_\_\_\_ / 100 |

## Global Penalties

* **Formatting / Document Structure (-0 to -15%)**: \_\_\_\_\_
  + Reason: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* **Excess Output (-0 to -15%)**: \_\_\_\_\_
  + Reason: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Total Global Penalty (%):** \_\_\_\_\_ (max 40%)  
**Final Exam Mark:** \_\_\_\_\_ %  
> Calculation: Subtotal × (1 - Penalty % / 100)

# III. Assessor Summary & Recommendations

* **Strengths:**
* **Weaknesses:**
* **Recommendations for Improvement:**