BCB744 Presentations

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0.1 Presentation Guidelines

You are required to prepare a professional **4 to 6-minute presentation** on one of the assigned topics. **Topics will be assigned at random the day before your presentation**, and you will not have the option to change your assigned topic or the date on which you present. Each topic will be presented by a single individual.

You may use any presentation software of your choice, but your final slides **must be submitted in PDF format**. Your presentation will be evaluated based on the **quality of your slides** (attention to detail is crucial – poorly designed slides will be penalised), the **depth of your understanding**, and your **ability to effectively communicate your insights to the class**. A good rule of thumb is to have one slide per minute of talking.

Your presentation should be built around **your own insights, reasoning, and critical engagement with the topic** – not simply a summary of existing information. While you should be well-informed, your goal is to **analyse, interpret, and construct a well-supported argument**, rather than merely listing facts or describing concepts. Depth matters (I am, therefore, less concerned with breadth). Strong presentations will explore nuances, challenge assumptions, and offer a clear, reasoned perspective.

Your slides should be **well-structured and visually compelling**, serving as an effective tool to communicate your argument. They should enhance your delivery, not act as a script – slides are for the benefit of the audience, not you! Using notes during your presentation is not allowed, and you will be penalised for exceeding the time limit.

Finally, to ensure that each student presents their own perspective, avoid incorporating visuals (unless required to demonstrate specific cases) – this presentation is about your ideas, your reasoning, and your ability to communicate effectively.

0.2 Assessment Guidelines

Each presentation will be evaluated based on the following five key criteria, with an integrated final score out of 100% (Assessment Sheet). Marks are allocated to reflect both the depth of thought and the effectiveness of communication.

1. **Depth of Understanding (30%)**

- Demonstrates a clear, well-developed grasp of the topic.
- Goes beyond surface-level descriptions—engages with nuances, complexities, and key debates.
- Provides a reasoned analysis, not just a factual summary.

- Supports arguments with logical reasoning and, where applicable, well-selected evidence.

2. **Originality & Critical Thinking (25%)**

- Demonstrates independent thought rather than reproducing information from sources.
- Engages with the topic in a way that challenges assumptions or explores alternative viewpoints.
- Avoids superficial arguments and instead constructs well-reasoned, persuasive perspectives.

3. **Communication & Delivery (20%)**

- Presents with clarity, confidence, and engagement—not simply reading from slides or notes.
- Articulates ideas logically, ensuring a smooth flow of concepts.
- Maintains good pacing (avoiding rushing or excessive pauses).
- Uses appropriate tone, vocabulary, and emphasis to enhance comprehension.

4. **Slide Quality & Structure (15%)**

- Slides are visually clean, well-organised, and reinforce key ideas (not overloaded with text).
- Information is structured logically, following a coherent narrative.
- Aesthetic choices (font, spacing, color contrast) enhance readability and engagement.

5. **Time Management & Adherence to Guidelines (10%)**

- Presentation is within the 5 to 7-minute limit (penalty for exceeding or falling short).
- Slides were submitted on time and in the correct format.
- No use of notes (penalty applies for reliance on written prompts).

Final Score: _____ / 100%

Presentations will contribute **20% to the Continuous Assessment mark** (10% each in Intro R and Biostatistics).

0.3 Submission Requirements

- **Deadline:** Submit your slides by **8:30 AM on the day of your presentation**.
- **Submission Format:** Email your slides as a PDF attachment.
- **Email Subject Line:**
  - 📌 BCB744 Presentation: [Your Surname]
- **File Naming Convention:**
  - 📄 BCB744_Presentation_[Your_Surname].pdf

Failure to adhere to these requirements may result in a grade penalty. Ensure that your slides are clear, well-structured, and visually professional.

1 Tuesday, 4 Feb 2025

1.1 Presentation 1: What are Universities About?

Presenter: 4122274

- What is the purpose of universities?
- Why do they exist?
- How will attending a university benefit you?

1.2 Presentation 2: Information vs Knowledge

Presenter: 4522462

- What is the difference?
- Where does information come from?
- Where does knowledge come from?

1.3 Presentation 3: What is Knowledge Good For?

Presenter: 4140637

- What is knowledge?
- What is the difference between knowledge and information?
- Discuss the importance of knowledge (what can we do with it?).

1.4 Presentation 4: Global Disparities in Knowledge

Presenter: 4139318

- Discuss the disparities in knowledge (access to/generating) globally (global north vs global south).
- Why do these disparities exist (historical reasons)?
- What are the implications of these disparities?
- How can we address them?

1.5 Presentation 5: The Future of Humanity

Presenter: 4021177

- Where will we (global) be in 50 years from now?
- Where will we (SA) be in 50 years from now?
- What do we (SA, global) need to do to get the future we want?

2 Wednesday, 5 Feb 2025

2.1 Presentation 6: Data Programming

Presenter: 3650596

- I am a biologist. Why all the fuss about programming and data?
- Discuss the pros and cons of scripting langauges.
- What are the most widely use scritping languages? Who uses then, and why?

2.2 Presentation 7: Data of Interest to Biological Scientists

Presenter: 4226846

- What kind of data do biological scientists work with?
- Where/how do they get it?
- What do we do with these data?

2.3 Presentation 8: The Importance of Visualisation

Presenter: 4123115

- Why is visualisation important?
- What are the different types of visualisations biologists are likely to use?
- How can visualisation be used to communicate science?

2.4 Presentation 9: Examples of Excellent Data Visualisations

Presenter: 4583635

- Discuss two examples of excellent data visualisation.
- What makes them excellent?
- How can we emulate them?

2.5 Presentation 10: Examples of Terrible Data Visualisations

Presenter: 4238411

- Discuss two examples of terrible data visualisation.
- What makes them terrible?
- How can we avoid making the same mistakes?

3 Thursday, 6 Feb 2025

3.1 Presentation 11: Maps in Biological Science

Presenter: 4522405

- Discuss the importance of maps in biological science.
- How can we use maps to communicate science?

- Show two good examples of maps that effectively communicate science.

3.2 Presentation 12: More About Maps

Presenter: None

- Give two examples of maps (one excellent, one terrible) that show interesting environmental (atmospheric, oceanic, etc.) phenomena.
- What makes each work/fail?

3.3 Presentation 13: Data Science and Science

Presenter: 4127564

- What is the difference between data science and science?
- Who can become scientists and data scientists?
- How is R useful outside of BCB?

3.4 Presentation 14: How to Teach Programming

Presenter: 4019014

- Discuss the best ways to teach coding.
- What are the most effective methods?
- What are the most common pitfalls?

3.5 Presentation 15: Generative AI

Presenter: 4146089

- What is it?
- What are the benefits (if any) in academia?
- How can I use it (responsibly and ethically)?

4 Friday, 7 Feb 2025

4.1 Presentation 16: How Science Works

Presenter: 3960428

- What does science do?
- What is the scientific method?
- What is science about?

4.2 Presentation 17: The Attributes of the Ideal Scientist

Presenter: 4027383

- What are the attributes of the ideal scientist?
- How can we cultivate these attributes in ourselves?

4.3 Presentation 18: The Threats to Scientific Progress

Presenter: 4027959

- What are the threats to scientific progress?
- How can we mitigate these threats?

4.4 Presentation 19: AI and the Future of Science

Presenter: 4123384

- Discuss the role of AI in the future of science.
- What are the implications of AI for scientific research?
- How can we prepare for these changes?

4.5 Prsentation 20: Knowing and Believing

Presenter: 4149898

- What is the difference?
- How do we know?
- What can we know?

4.6 Presentation 21: The Limits of Science

Presenter: 4154838

- Can we know everything?
- What are the limits of science?

4.7 Presentation 22: What Should Science Not Question, if Anything?

Presenter: 4265441

- Should science 'be allowed' question everything? If not, what should it not question? If so, who decides?
- What do ethics and morals have to say about what may be questioned?
- Any taboos?

4.8 Presentation 23: The Role of Science in Society

Presenter: 4522577

- Must science serve society?
- What is the role of science in society?
- How can we ensure that science serves society?

4.9 Presentation 24: Scientific Frontiers

Presenter: 4021655

- What are the frontiers of science?
- What are the most pressing questions in science today?
- What, in your opinion, would be the most interesting questions to answer?

Bibliography