

# PMM Template Slides: Title of submodule

Author

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## Contribution statement and licence

**Creator:** Name, first name, (orcid)

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**Speaker Notes:** These are the **speaker notes**. You will a script for the presenter for every slide. In presentation mode, your audience will not be able to see these speaker notes, they are only visible to the presenter.

**Instructor Notes:** There are also **instructor notes**. For some slides, there will be pedagogical tips, suggestons for acitivities and troubleshooting tips for issues your audience might run into. You can find these notes underneath the speaker notes.

**Acessibility Tips:** where applicable, this is a space to add any tips you may have to facilitate the accessibility of your slides and activities.

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## Prerequisites - table format

! Important

Before completing this submodule, please carefully read about the necessary prerequisites.

Prerequisite	Description	Link/Where to find it
Topic Name	Basic intro to X	Module + Submodule

Prerequisite	Description	Link/Where to find it
Software Name	Configuring the environment	<a href="#">Download Link</a>

**Speaker Notes:** Script for the presentation here.

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### Prerequisites - bullet points

**!** Important

Before completing this submodule, please carefully read about the necessary prerequisites.

- **Aim:** Outline any essential prerequisites (software, tools, other submodules etc.) here in bullet point format.

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### Questions from previous submodule

- **Aim:** This first slide is dedicated to clarifying questions from the previous submodule and/or to discuss assignments.
- Additional slides may need to be added depending on the nature of the homework assignments.
- Critical for the learning process to ensure that students are on the same page and have been able to achieve the learning goals of the previous workshop.
- Not applicable if this set of slides corresponds to the first submodule of a new module.

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## **Before we start: Survey time!**

- **Aim:** The pre-submodule survey serves to examine students' prior knowledge about the submodule's topic.
- Use free survey software such as or other survey software (particify, formR) to establish the following questions (shown on separate slides).

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**What is your level of familiarity with [Topic] (e.g., basic concepts, terminology, or tools)?**

- a. I have never heard of it before.
  - b. I have heard of it but have never worked with it.
  - c. I have basic understanding and experience with it.
  - d. I am very familiar and have worked with it extensively.
- 

**Which of the following concepts or skills do you feel most confident about in relation to [Topic]? (Select all that apply)**

- a. Concept 1
  - b. Concept 2
  - c. Concept 3
  - d. Concept 4
  - e. I am not sure about any of these concepts.
- 

**On a scale of 1 to 5, how comfortable are you with using [specific tool/technology] related to [Topic]? (1 = Not comfortable at all, 5 = Very comfortable)**

- a. 1
- b. 2
- c. 3
- d. 4

e. 5

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## **Discussion of survey results**

- **Aim**”: Briefly examine the answers given to each question interactively with the group.
- Use visuals from the survey to highlight specific answers.

**Speaker Notes:** Script for the presentation here.

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## **Where are we at?**

- **Aim:** Place the topic of the current submodule within a broader context.
- Remind students what you are working towards and what the bigger picture is.

**Speaker Notes:** Script for the presentation here.

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## **Learning goals**

- **Aim:** Formulate specific, action-oriented goals learning goals which are measurable and observable in line with Bloom’s taxonomy (Anderson et al., 2001; Bloom et al., 1956)
- Place an emphasis on the **verbs** of the learning goals and choose verbs that align with the skills you want to develop or assess.
- Examples:
  - Students will **describe** the process of photosynthesis or
  - Students will **construct** a diagram illustrating the process of photosynthesis

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## Covered in in this session

- **Aim:** This slides serves as an overview of the topics that are discussed, presented as bullet point:
  - Topic 1
  - Topic 2
  - Topic 3

**Speaker Notes:** Script for the presentation here.

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## Key terms and definitions

- **Aim:** Introduce key terms and definitions that students will come across throughout the session.
- **Key Term 1:** Definition
- **Key Term 2:** Definition
- **Key Term 3:** Definition

**Speaker Notes:** Base yourself on conceptual change theory and examine existing concepts in relation to some key terms. Re-examine formation of new concepts at the end of the lesson.

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## Introduction of submodule topic

- **Aim:** Core theoretical introduction of submodule topic.
- Pair theoretical aspects with practical exercises and group discussions according to the Think-Pair-Share style and according to Cognitive Load Theory (Sweller, 1980).
- Use multiple slides for this part.

**Speaker notes:** For a 90-minute lesson, the instructor should try to “lecture” for only 20 minutes, students should work in groups/pairs/on their own for at least 55 minutes of the lesson (+ a 15 minute break).

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## **Submodule content slide**

- **Aim:** Present relevant content
- Highlight particularly important aspects with Quarto call-out boxes, for example:

### **! Important with Title**

This is an example of a callout box to highlight particularly important information.

### **💡 Tip with Title**

This is an example of a callout box to give important tips.

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## **Practical exercise 1**

- **Aim:** Design more practical exercises for students to apply the new skills in practise.
- Depending on the topic, the exercises should be in accordance with the learning objective(s).
- Add a description of the task, as well as a checklist as an overview of what your students need to be doing.

Step 1

Step 2

Step 3

**Speaker Notes:** Script for the presentation here.

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## **Pre-break survey**

- **Aim:** This pre-break survey serves to examine students' current understanding of key concepts of the submodule
- Use free survey software such as or other survey software (particify, formR) to establish the following questions (shown on separate slides):

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**Which species is the largest type of penguin?**

- a. Chinstrap Penguin
  - b. Emperor Penguin
  - c. Adélie Penguin
  - d. King Penguin
- 

**What is the key biological feature that helps penguins swim efficiently?**

- a. Hollow bones for buoyancy
  - b. Webbed feet for paddling
  - c. Waterproof feathers and flipper-like wings
  - d. Gills to breathe underwater
- 

**Break! 15 minutes**

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**Post-break survey discussion**

- **Aim:** To clarify concepts and aspects that are not yet understood
- Highlight specific answers given during the survey

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## Practical exercise 2

- **Aim:** Design more practical exercises for students to apply the new skills in practise.
- Depending on the topic, the exercises should be in accordance with the learning objective(s).
- Add a description of the task, as well as a checklist as an overview of that your students need to be doing.

Step 1

Step 2

Step 3

**Speaker Notes:** Script for the presentation here.

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## Relevance and implications

- **Aim:** To work out the relevance of the topic to your students.
- In an interactive setting, discuss how the new skills could be applied in practise with specific examples.
- Examine downfalls and practical obstacles.

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## Take-home message

**Aim:** End lesson on clear take-home message that are interactively compiled by students.

 Tip with Title

Add one practical tips or take-home message.

**Speaker Notes:** Script for the presentation here.

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## **Assignment**

- **Aim:** Explain the homework assignment and the rationale behind the homework.
- Examine whether/how it will be assessed
- Mention scoring rubrics, if applicable
- Design a peer-review system for assignments to place students in role of reviewer and author

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## **To conclude: Survey time!**

- **Aim:** This post-submodule survey serves to examine students' current knowledge about the submodule's topic.
- Use free survey software such as or other survey software (particify, formR) to establish the following questions (shown on separate slides):

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**What is your level of familiarity with [Topic] (e.g., basic concepts, terminology, or tools)?**

- a. I have never heard of it before.
  - b. I have heard of it but have never worked with it.
  - c. I have basic understanding and experience with it.
  - d. I am very familiar and have worked with it extensively.
- 

**Which of the following concepts or skills do you feel most confident about in relation to [Topic]? (Select all that apply)**

- a. Concept 1
- b. Concept 2
- c. Concept 3
- d. Concept 4

- e. I am not sure about any of these concepts.
- 

**On a scale of 1 to 5, how comfortable are you with using [specific tool/technology] related to [Topic]? (1 = Not comfortable at all, 5 = Very comfortable)**

- a. 1
  - b. 2
  - c. 3
  - d. 4
  - e. 5
- 

### **Discussion of survey results**

- **Aim:** Briefly examine the answers given to each question interactively with the group.
- Compare and highlight specific differences in answers between pre- and post-survey answers

**Speaker Notes:** Script for the presentation here.

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### **References**

- Provide literature you refer to throughout this lesson.

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### **Thanks!**

See you next class :)

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## **Pedagogical add-on tools for instructors**

- This section is dedicated to ideas on how to incorporate pedagogical tools into teaching for this specific submodule topic. This could mean:
    - Information about the scientific evidence on the theory of the pedagogical add-on tool and the evidence for its efficacy.
    - Discussion/reflection on how tools can be incorporated into the teaching for this particular content.
    - Extra exercises for faster students.
- 

## **Additional literature for instructors**

- References for content
  - References for pedagogical add-on tools
  - Other resources (videos etc.)
- 

## **Formatting elements for instructors**

- **Aim:** This section contains templates for different formatting elements, which can be modified and adapted for the instructor's individual purposes.
- 

## **Text with example links**

- [Quarto Documentation](#)
  - [Reveal.js Documentation](#)
  - [Markdown Guide](#)
  - [GitHub](#)
-

## Basic text formatting

- **Bold:** **\*\*bold\*\*** → bold
  - *Italic:* **\*italic\*** → italic
  - **Strikethrough:** **~~text~~** → text
  - **Inline code:** **`code`** → code
  - **Blockquote:** > **Quote** →  
“This is a quote”
- 

## Figure with caption

- Centered image and caption below in italics

This is a Penguin.

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## Figure with bullet points

- First bullet point
  - Second bullet point
  - Third bullet point
- 

## Side-by-side figures

## Stacked figures with text

- First bullet point
  - Second bullet point
  - Third bullet point
-

## **Two-column text slide**

### **Column 1**

  Lorem ipsum dolor sit amet, consectetur adipiscing elit.

  Vivamus lacinia odio vitae vestibulum.

  Cras venenatis euismod malesuada.

### **Column 2**

  Sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

  Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris.

---

## **Three-column text slide**

### **Column 1**

  Lorem ipsum dolor sit amet, consectetur adipiscing elit.

  Vivamus lacinia odio vitae vestibulum.

### **Column 2**

  Sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

  Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris.

### **Column 3**

  Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.

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## **Simple table**

Column 1	Column 2	Column 3
Row 1 Cell	Row 1 Cell	Row 1 Cell
Row 2 Cell	Row 2 Cell	Row 2 Cell
Row 3 Cell	Row 3 Cell	Row 3 Cell
Row 4 Cell	Row 4 Cell	Row 4 Cell

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## Complex table

Column 1	Column 2	Column 3
Row 1 Cell	Row 1 Cell	Row 1 Cell
Row 2 Cell	Row 2 Cell	Row 2 Cell
Row 3 Cell	Row 3 Cell	Row 3 Cell
Row 4 Cell	Row 4 Cell	Row 4 Cell

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## Task list

- Done
  - To do
- 

## Embedding videos

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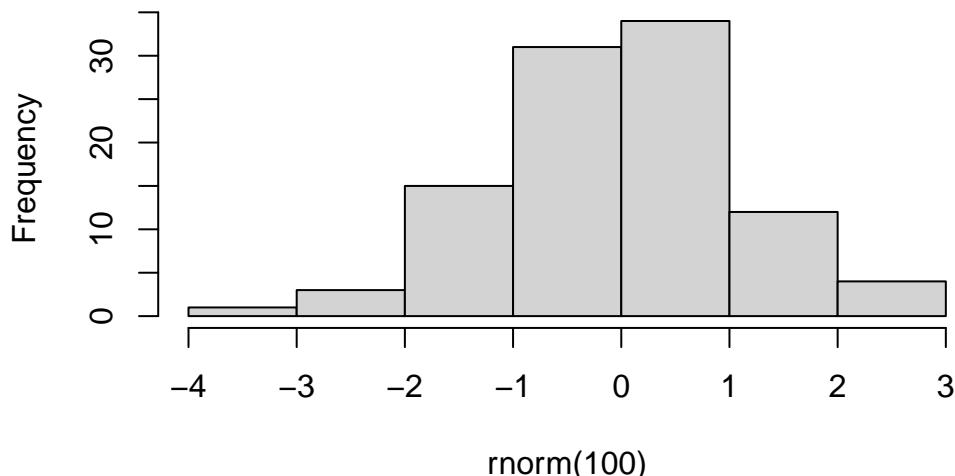
## Code blocks

```
# A basic R code chunk
x <- 1:10
mean(x)
```

```
[1] 5.5
```

```
# A simple plot
hist(rnorm(100), main = "Histogram of Random Normals")
```

## Histogram of Random Normals



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### Attribution and license details

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  - The default for the created materials is [CC-BY-SA 4.0](#)
    - = Creative Commons license that allows others to **share, adapt, and build upon** the original work
    - **only** if they attribute the creator and also share their new work under the **same terms**
    - allows for both **commercial and non-commercial** use of the licensed material
  - Components of attributions:
    - Title
    - Author
    - Source
    - License
-

## **Credit Statement**

Possible roles using the CRediT contribution system:

**Name main content creator:** Conceptualization, Software, Writing - Original Draft, Visualization. **Sara Lil Middleton:** Writing - Review & Editing, Supervision. **Sarah von Grebmer zu Wolfsthurn:** Conceptualisation, Writing - Review & Editing, Supervision, Project Administration, Validation.

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