Module Planning template
NGS Bioinformatics - Remote classrooms

Module Title: RNA Seq Human

- ➔ **Module Lead/Co-leads/Assistants** - Nyasha, Phelelani, Jon

- ➔ **Summary or objectives** – what you plan to cover for this module
  - ◆ RNA-seq background
  - ◆ Mapping
    - Genome
    - Transcriptome
  - ◆ Expression Quantification
  - ◆ Normalization
  - ◆ Differential expression and QC (Sleuth)
  - ◆ Downstream analysis
    - GSEA
    - others?

- ➔ **List of learning outcomes specific for this module** (Please list 3 - 5 Learning Outcomes here; refer to How to writing learning outcomes)
  1. Align RNA-seq reads to a reference genome and a transcriptome
  2. Perform QC of NGS transcriptomic data
  3. Quantify the expression values of your transcripts using standard tools
  4. Visualize transcription data using standard tools

- ➔ **Total number of hours/days to be spent on this content:** 8 hours

- ➔ **Tools/software and resources to be used**
  - ◆ Software
    - HISAT2
    - Samtools
    - IGV
    - Kallisto
    - R
    - Sleuth
    - bedtools
  - ◆ Description of datasets to be used (if known)
  - ◆ Other resources, or readings

- ➔ **Overview of activities and exercises (**list specific practical activities which participants will do)
  Introduction lecture:

Exercise/Activity 1:
Exercise 2:
Exercise 3:

➔ **Assessment**
Assignment 1:

➔ **Competencies**
If you are comfortable with competencies, please list the competency/ies this module will address:

- ….

Appendix *(include any guideline documents related to content development such as breaking down content for remote classroom format, how to write LO's, designing assignments etc…)*

See links to other guidelines
-Overall trainer guideline and template documents will include information on lecture formats and recordings, contact sessions schedules, checklists, assignments and assessments, quizzes, feedback, audio-video conferencing, learning management platform, teaching assistants

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