Detailed programme overview

WEEK 1: Morning (9-12)	Monday	Tuesday	Wednesday	Thursday	Friday
	Course intro *Lecture (9-9.30)*: "Welcome and introduction by ECDC" *Lecture (9.45-10.30)*: "The role of genome sequencing in pathogen surveillance" *Short talk (10.40-11)*: "Overview of course and ILOs" *Group talk (11-12)*: "Getting to know your fellow course participants"	**Getting started with Python** *Practical (9.30-10.15): "Python introduction"* *Lecture (10.30-10.50): "Python as a bioinformatical tool"* *Practical (10.50-12): "Getting started with python"*	**Sequencing and raw-data QC** *Lecture (9.00 - 9.30):* "Introduction to sequencing" *Lecture (9.40 – 10.45):* "Overview of sequencing technologies" *Interactive Lecture/Practical (11.00 – 12.00):* "Sequencing Quality"	**Genome assembly** *Lecture (9-9.45):* "Genome assembly strategies" *Practical (10-11):* "Bacterial genome assembly with short reads" *Practical (11-12):* "Basic assembly QC stats"	**Genome assembly** *Lecture (9-9.30):* "Intro to long-read and hybrid genome assembly *Practical* (9.30-11): "Long-read and hybrid assembly" *Practical (11-12):* "Genome assembly comparison"

WEEK 1: Afternoon (13-16.30)	Monday	Tuesday	Wednesday	Thursday	Friday
	Getting started with the command-line and Bash *Lecture (13-13.20): "Command-line introduction"* *Practical (13.20-14.20): "Getting started with the Command-line"* *Lecture (14.30-14.45): "Bash Introduction* *Practical (14.45-16.30): "Getting started with Bash"*	**Advancing in programming** *Lecture (13-13.20): "Programming recap and Biopython deep-dive"* *Coding session (13.20-16.20): Free* *Lecture (16.20-16.30): "Programming wrap-up"*	**Sequencing and raw-data QC** *Lecture/Practical (13.00-15.00):* "Quality control of sequencing data" *Lecture/Practical (15:00-16.30):* "Contamination control, sample aggregation, and wrap-up"	**Genome assembly** *Lecture/practical (13-14.30): "Contamination"* *Coding session (14.30-16.30): Biopython for assembly analysis*	**Genome analysis intro** *Lecture/Practical (13-15):* "Blast, in-silico MLST and gene annotation" *Coding session (15-16.30): Free*

WEEK 2: Morning	Monday	Tuesday	Wednesday	Thursday	Friday
	Getting started with phylogenies *Lecture (9-10):* "Evolution and phylogenies" *Practical (10.20-12)*: "Sequence handling and alignment"	**Outbreaks, typing and AMR** *Lecture (9-9.25):* Intro to WGS-based FWD surveillance *Practical (9.25-12)*: Listeria outbreak detection	**Pipeline development** *Lecture (9-9.45):* "Basic principles of automation" *Practical (10.00-11.45):* "Pipeline development – scaling number of tools and samples"	**Data sharing** *Lecture (9-9.45):* "Introduction to sequence databases and data sharing" *Demo/practical (10.00-11.15):* "Uploading raw sequence data to ENA" *Practical (11.15-12):* "Data exploration and retrieval using ENA resources"	**Automation – going large-scale** *Lecture (9-9.45):* "Automating the lab for large-scale testing and sequencing" *Site-visit (9.45-10.15):* "Visit to the Danish Biobank" **What´s next?** *Lecture (10.45-11.30):* "Outlook – how to keep learning" **Evaluation** Evaluation (11.30-12): "Course evaluation: formal"

WEEK 2: Afternoon	Monday	Tuesday	Wednesday	Thursday	Friday
	Getting started with phylogenies *Lecture (13-14):* "Phylogenetic methods" *Practical (14.30-16.30)*: "Inferring phylogenies"	**Outbreaks, typing and AMR** *Practical (13-14.30):* Serotyping and virulence typing *Practical (14.30-16):* AMR and point mutations detection in Salmonella *Wrap-up/Q&A (16-16.30)*	**Pipeline development** *Practical (12.45-15.30):* "Pipeline development – from raw reads to data sharing" *Free session (15.30-16.30):* "Setup at SSI and how automation could be introduced in participants' workflows"	**Data sharing** *Lecture (13-13.45):* "Intro to online tools for genome analysis, data sharing and visualization, developed by ECDC) *Practical (14-16.30):* "Exploring Microreact, EpiPulse and Tessy"	**Evaluation** *Evaluation (13-13.30):* "Course evaluation: (in)formal" **What´s next?** *Free session (13.30-15.30):* "Q and A with your trainers"