

Module	Lectures	Topic
M1	3	<u>The UNIX/Linux Oss (A. V. Vargiu/G. Bozzi)</u> 1. Working with the shell, the basics 2. Sed, grep, awk, and other tools to analyze data by “one row” scripts 3. Condor/slurm: how to manage HPC jobs
M2	4	<u>Advanced statistical analysis: theory and practice</u> (in class data analysis exercises using Python and R; <u>(A. Riggio)</u> 1. Recap of the basic concepts in Statistics, recap of the more common distributions 2. Statistical tests: Student’s t-test, Fisher chi squared test, Snedecor F test, Kolmogorov-Smirnov test 3. Non-linear least-squared regression and confidence intervals
M3	5	<u>How to present your results: a tutorial on plotting (R. Dettori/C. Melis)</u> 1. Python vs Gnuplot, overview of main plotting/visualization libraries 2. Python: plotting with Matplotlib/Seaborn 3. Python: manipulating data with Pandas 4. Python: useful libraries for data processing and visualization (Scipy, Scikit-learn, Plotly)