

Syllabus – MICRO 110 Spring 2019

Instructor: Prof. Vivek Subramanian

Email: vivek.subramanian@epfl.ch

Phone: +41216954265

Student Teaching Assistants:

- Meier Yann yann.meier@epfl.ch
- Morzhakov Daniil daniil.morzhakov@epfl.ch
- Wei Amaury Pierre Jiezhi amaury.wei@epfl.ch
- Charrier Andrea andrea.charrier@epfl.ch
- Morisod Nicolas Michel nicolas.morisod@epfl.ch
- Wüst Matthias René matthias.wust@epfl.ch

PhD teaching Assistants

- tbd

Lectures: 16h-18h in CO3

Exercises: 18h-19h in computer rooms CO 4-5-6 and 260 (4 rooms) and auditorium CO 3 as a backup.

Examinations:

- There will be two midterm quizzes, each worth 10% of the course grade. The dates for the quizzes are as follows (to be held in class. You will need to bring your personal computer):
 - Quiz 1: March 28
 - Quiz 2: May 23
- The final examination date will be announced during the semester when available.

The course outline is as follows (outline will be updated as the course progresses, based on pace of course and other scheduling and learning factors):

Topic	Key material
Course Introduction	<ul style="list-style-type: none">• Overview of the course<ul style="list-style-type: none">○ Observing Experiments○ Designing efficient experiments○ Building models• Why do we care about use of statistics?<ul style="list-style-type: none">○ Observation○ Model building○ Inference• Some examples to consider:<ul style="list-style-type: none">○ Electronic circuits○ Watch mechanisms
Introduction to statistics	<ul style="list-style-type: none">• Mean, Median, Mode, Standard Deviation• Population Statistics<ul style="list-style-type: none">○ Graphical Representation○ Population distributions○ Mean and standard deviation○ Sampling
Comparison Statistics	<ul style="list-style-type: none">• Blocking and randomization• Replication

	<ul style="list-style-type: none">• Significance tests• Regression and fitting
Design of Experiments	<ul style="list-style-type: none">• Factorial design• Fractional factorial design• Heuristic-based design