

# Checklist for teaching courses in Stat-ML

Aaditya Ramdas ([aramdas@cmu.edu](mailto:aramdas@cmu.edu)), Carnegie Mellon University

Some personal suggestions (via accumulated wisdom) for assistant professors in Stat-ML.

Before the course:

- Fix the syllabus early and distribute it widely (potentially to other departments). I personally to prefer have all materials hosted on a *public* course website, which I set up early and link from my webpage.
- In particular, fix the grading scheme, the homework due dates, exam date, project expectations, keeping in mind holidays, etc (eg: for PhD classes, I try to have one homework each month, due Fri not Mon). Fix a late day policy (eg: I allow a total of 4 late days split across 4 assignments as the student pleases).
- Make sure the TAs understand their duties, and are okay with their load. Giving them some agency (eg: designing HW or exam questions, if capable) can sometimes be fun for them.
- Fix the electronics policy; eg: I disallow electronics except for note-taking, and back up the policy with education research. Discuss the syllabus in class so everyone is aware of the policy and reasoning.
- Point to resources for student support (eg: counseling, language or disability). Make the academic integrity policy clear, also covering the use of Large Language Models or Generative AI.

Before the lecture:

- Go through the material in detail to make sure you deeply understand it; try to anticipate confusion points.
- (Board) Plan in advance how you hope to use the board space, what you may want to not erase (eg: definitions/notation). (Slides) Be vigilant for typos and introduce pauses on each slide to go slow.
- If you have slides or lecture notes, distribute them *before* the class. Some students print them or use iPads, and add their own notes on top. Otherwise, I get one or two students to scribe each lecture (for a grade).

During the lecture (aim: at least 80% of the students get at least 80% of the material):

- Begin the lecture by reminding students what was covered in the last couple of lectures (or where we are in the course more broadly), and giving them an overview of what will be covered today.
- (Board) Write legibly, talk loudly (since you may face the board), and turn around frequently. (Slide) Write a few key things on the board from time to time, go much slower than a typical seminar talk.
- Make eye contact, and earnestly ask for questions. Questions by one student can answer another student's doubts. They break monotony and wake people up. They help you gauge whether most people are following.
- If the class is longer than 50mins (eg: mine are usually 80mins), consider giving a few mins "mobile, stretching and toilet break" in the middle; it helps with student attention and comfort.
- End the lecture with a summary of some key takeaway points and where you're going next.

After the lecture:

- Correct slides or course notes if typos were found; add slides or notes if needed for clarification.
- Release HW solutions on time, potentially collated from the best student solutions (with permission).

After the course:

- Sincerely ask the students for feedback about the course and suggestions for improvement (typically anonymous). Soliciting such feedback even on month into the course can be useful to make small changes.
- Reflect on what you think went well and what could improve, take written notes to inform a future offering of your course (don't rely on memory). Pat yourself on the back, it's hard work and you performed it sincerely.