

PhD Teaching Framework in CST

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1 Introduction

Teaching is an important element of the research development of PhD students. In CST, PhD students can participate in teaching mainly via supervisions, demonstrations, ticking, and Part II, III and MPhil project co-supervision. A teaching experience gives PhD students the opportunity, amongst others to:

- share their deep knowledge of the field with our CST undergraduate students and so further improve their own understanding,
- enhance their communication, presentation and organisation skills,
- learn how to better organise their own research work and efficiently manage others, and to
- further strengthen their CVs.

Engaging PhD students in teaching has many benefits for the department. It promotes increased interaction and communication amongst the different CST groups as it exposes our students to our research and creates more opportunities for them to contribute to our projects. Further, it provides a larger and more varied pool of potential projects that Part II, Part III and MPhil students can engage in.

So far, PhD-led teaching has been performed in an ad-hoc manner where PhD students can freely choose to engage or not, at any point during their PhD studies, in one or more forms of teaching such as undergraduate course and project supervision. Note that there are upper limits on the total number of hours a PhD is allowed to work per week, i.e., a ten hours/week limit is set by the university and a six hours/week limit is imposed by our department. This document proposes a new *PhD Teaching Framework* where *all* PhD students actively participate in teaching in a constructive manner. We believe that such a framework will allow our PhD students and the department to benefit for a better overall teaching experience.

2 Analysis of Historical Data

We analysed 383 past records of PhD teaching over six academic years during the period of 2013/14 - 2018/19. Data come from tally sheets collected by the Postgraduate Education Office. However, note that not all students recorded their teaching in their tally sheets. The purpose of this activity is to better understand how PhD teaching has been performed in the past in order to build an informed future PhD Teaching Framework. In this section we discuss interesting highlights.

First, we identify five main teaching activities that PhD students were involved with:

1. Part IA, IB and II undergraduate supervision (all years) (**supervision**)
2. Project supervision for Part II, Part III and MPhil (**project**)
3. Ticking (**ticks**)
4. Demonstrations (**demo**)
5. Miscellaneous, e.g., practical classes, open days, talks, advisory role to an Erasmus student, mock exam marking, invigilation, etc. (**misc**)

Second, students spent 5,005h in total on teaching across all activities over six years and only 31h were recorded for the two academic years of 2013/14 and 2014/15. Looking at all tally sheets there are 382¹ different entries and the average number of hours per entry is 13.5h. An entry can refer to any teaching activity by a single student such as a course **supervision** or a **project**. The maximum hours recorded in a single entry is 72h (i.e., Part IA **demo**) and the minimum hours is 1h on **supervision**. We now further discuss our data according to teaching activities, students and academic years.

Third, **supervision** is the activity with the highest number of hours spent on by our students, i.e., 3,408h in total compared to 526h on **demo**, 475h on **project**, 332h on **misc** and 263h on **ticks**.

Forth, 220 different students delivered all teaching and the average number of hours spent by a student was 23h. There is a large variation on hours spent by different students. The maximum number of hours recorded by a single student was 133h and the minimum recorded hours was 1h. Notably, the student with the maximum total hours spent all their teaching hours on Part II, III and MPhil **project** in two consecutive academic years.

Fifth, looking at a single academic year (2018/19) 94 [77]² students delivered 2,170h [1,823h] of teaching in total. The average hours spent by a student was 23.8h [24.3h]. The maximum hours spent by a student was 119h—spent on ten different courses of **supervision** [89h spent on eight different courses of **supervision**—and the minimum hours was 1h [2h]. Most of teaching was spent on **supervision** 1,441.8h [1,173h], then **demo** 262.0h [192], **project** 204h

¹Unless stated otherwise, all numbers refer to teaching over the six years mentioned above.

²In this paragraph we use [...] to present results for 2017/18.

Activity	PTF minimum load
supervision	1 group on any course in a single term
project	1 Part II, III or MPhil student project in a year
demo	1 hour of demonstration in any course in a single term
ticks	1 hour of ticking in any course in a single term
TA	1 TA support in any course in a single term
misc	1 misc <i>activity</i> in a single term

Table 1: PTF minimum load per teaching activity.

[211], ticks 170h [73] and finally 92h [175h] on *misc*. Finally, 57 out of 94 [41 out of 77] students performed at least one hour of group supervision.

To conclude, supervision is by far the main teaching activity, in terms of both the total hours spent and the number of students involved, that most of our PhD students participated in.

3 Framework

We propose a new **PhD Teaching Framework (PTF)** where every PhD student has to perform a number of teaching activities as part of their Research Skills Programme (RSP). To this end we propose a new *mandatory* MU101 RSP unit entitled “*PhD Teaching Framework*” to encapsulate the PTF programme. In what follows, we describe in details the PTF programme. Our overriding principle is to expose all PhD students to a teaching experience in as flexible manner as possible, where they can tailor the amount as they see appropriate.

First, in Table 1 we enumerate all teaching activities that are included in the PTF programme. For each activity we discuss the minimum amount of teaching load that a student should take in order for this activity to be successfully counted for the PTF purposes. Note that students can take on more teaching as appropriate. Table 1 enlists popular teaching activities such as **supervision**, **project**, **demo** and **ticks**. The table also includes two additional activities which we describe next. First, **Teaching Assistance (TA)** includes all activities to support teaching on a course that are not part of **supervision**, **demo** or **ticks**. Instead **TA** can include activities such as preparing and running tutorials, setting and marking coursework, guest lectures, etc. Second, in the **misc** category we consider any other activities not included in any of the above categories such as open days, running an RSP unit, running a reading group, etc. Due to the diversity of activities in the **misc** category the PTF minimum load will have to be discussed with and approved by the RSP coordinator *before* the start of the activity.

Second, below we discuss the rules around the PTF programme:

1. Every PhD student has to successfully complete their MU101 unit within their first three year of PhD studies³.

³The number of terms is adjusted accordingly for part-time students.

2. To complete the MU101 unit a student has to successfully complete *any single* teaching activity in their first year of PhD studies and then *any two* in their second and third years. So, in total a student has to successfully undertake *five* activities in the first three years of their PhD. *Our goal is to help students spread their teaching load over the years.* Note that the possible minimum load of the PTF programme over the duration of the PhD is 5h, e.g., four **demo** and one **misc** activities of 1h each, and the possible maximum load could exceed 65h, e.g., two **project** (16h each), two **TA** (16h each) and one **misc** (1h).
3. Within these five activities at least *two* should be different. *Our goal is to allow students to engage in different activities for a better overall teaching experience.*
4. Both activities in a single year can be completed in any term and a student can perform two activities in the same term. If both activities are of the same type and they are performed in the same term, they should be on different courses. *Our goal is to allow students to spread their load as they see appropriate with regards to their research work.*
5. All students have to attend the new MU101 mandatory unit given in the Michaelmas term⁴. In this unit we introduce and explain the PTF programme and discuss matters of PhD teaching in the department.
6. The PTF programme sets the **minimum** teaching that any student should undertake. Students can take on more teaching subject to other constraints beyond the PTF programme and with approval of their supervisor.
7. Finally, we will use the existing tally sheets to record students' teaching activities.

Example A: Student A takes four **supervisions** and one **demo** activities to complete their MU101 unit. **Supervisions** are done in the Michaelmas term of their first year, in the Michaelmas and Easter terms in their second year, and Lent term in their third year. The **demo** is done in the Michaelmas term in their third year. **Example B:** Student B performs one **supervision** (Lent term first year), one **ticks** (Easter term second year), two **projects** (second and third years), one **misc** (open day in Easter term third year).

We recognise that there can be significant differences in the teaching load among the different activities. The PTF goal is *not* to fairly distribute the teaching load among PhD students. Rather, our goal is to actively encourage students to participate in *any* teaching activity and gain useful experiences for their future careers. To this end we take a lightweight approach on how we account when a student successfully completes a teaching activity and thus eventually completes the PTF programme. Our goal is to give PhD students a range of

⁴We will deliver this unit (recorded or online) as needed for students enrolled in other terms.

activities with different loads that they can carefully mix-and-match according to their time availability and future career goals. For example, to complete the PTF programme Student A above chose to carry out **supervisions** for four different groups and 1h of **demo** in their three years of studies. Student B, on the other hand, chose to have a heavier teaching load, by supervising two different projects and one course group, performing 1h of **ticks** and participating in one open day.

4 FAQ

Q: Does teaching in other departments count for PTF?

A: Yes, but check with the RSP coordinator first.

Q: Can I co-supervise a Part II, III or MPhil project in the first year of my PhD?

A: Yes, but only if you have been an undergraduate, Part III or MPhil student in this department and have done such a project yourself, and if your PhD supervisor who will be the project's main supervisor agrees.

Q: Can I do more than 5 teaching activities during my PhD?

A: Absolutely, if your PhD supervisor is in agreement. The goal of PTF is not to limit you, but to expose you to teaching opportunities.