

School of Computer Science and Engineering Workload Model April 2020

The model is developed with reference to the UNSW (Academic Staff) Enterprise Agreement 2018 ("the Agreement"), and applies to all teaching and research staff and all education focused staff ("staff") in the School of Computer Science and Engineering ("the School"), and applies pro-rata to part time staff or staff on fractional appointments to the School, except for staff on research fellowships or secondments, typically allowing 70–80% research, who are expected to spend the remainder of their time on teaching and leadership/service.

For the sake of clarity in this document, a staff member is defined to be *education focused* if they are: (i) an education focused employee, or (ii) a teaching and research staff member undertaking a predominantly education focused role for a defined period, as allowed under Schedule 3(c) of the Agreement.

A full workload (expressed as 100%) for a full time employee is 1610 hours per year, as implied by the Agreement. Academic work is divided into teaching, education related activities (as defined in Clause 24.2(c)(ii) of the Agreement), research and leadership/service. The work breakdown for the two types of staff is as follows.

1. Teaching and research staff are expected to allocate their time as follows:
 - Teaching – 40%;
 - Research – 40%;
 - Leadership/service – 20%.

2. Education focused staff are expected to allocate their time as follows:
 - Teaching – 65%;
 - Education related activities – 15%;
 - Leadership/service – 20%.

The *education load* of an education focused staff member is defined to be their combined load from teaching and education related activities. Thus the education load of a full time education focused staff member does not exceed 1288 hours (0.80 FTE), as required by Clause 24.2(d) of the Agreement.

Teaching

Teaching encompasses course preparation, lecturing, tutorials, lab demonstrations, marking and coursework thesis supervision. Sections 1–5 concern standard lecture-based and project-based courses. Online teaching is discussed in Section 6. Each standard course is allocated to one lecturer in charge who is also the main course lecturer and responsible for all course administration and assessment. It is therefore convenient to define the load for the lecturer of a single standard course, as this forms the basis of the teaching workload for most staff.

Roughly, each teaching and research staff member is expected to fully lecture one standard course per term in two terms a year, and each education focused staff member one course per term in three terms a year, though exact workloads vary according to the course size and type of course, and staff teaching small courses may need to take tutorials or labs, or supervise coursework thesis students to reach their required teaching workload.

1. Lecture-Based Courses

The load assigned to the lecturing duties for a single course is defined as $238 + 10N$ hours, where N is the number of students enrolled in the course at the end of term divided by 50, rounded up to the nearest integer. Equivalently, the load for the lecturing a course of up to 50 students is 248 hours, and the load increases by 10 hours for each additional 50 students. The first two columns in Table 1 show the exact lecturer load in hours for a lecture-based course of size up to 800. This formulation is in recognition of the fact that the time taken to lecture a course increases with the size of the course (see Clause 24.2(c)(i) of the Agreement).

The basis for this calculation and the scope of work covered by the allotted hours are as follows. In cases where duties are split between two or more staff members, the workload hours are shared between them by arrangement.

(a) *Lectures* – 108 hours

A lecture-based course is presumed to have 36 lectures, 4 lectures per week in 9 weeks of a 10-week term. Consistent with Schedule 2 of the Agreement, each lecture hour involves two hours of associated work.

(b) *Lecturer in Charge (LiC)* – $30 + 2N$ hours, where N is defined as above.

The work of the LiC includes handling term planning, room bookings, enrolment requests and requests for course equivalence, selecting tutors/demonstrators, updating the syllabus, course outline, tutorials, labs and online materials, coordinating with lecturer(s) of other streams, convening weekly tutor meetings, coordinating tutors/demonstrators, finalizing marks and grades, setting up and marking supplementary exams, and deciding plagiarism cases, grievance cases and marks reviews.

(c) *Course administration* – $30 + 3N$ hours, where N is defined as above.

This work includes setting up systems for administration, marking, marks finalization and plagiarism detection, and the course forum, updating and check lab software, updating tutor notes and sample solutions for tutorials/labs, responding to tutor e-mail throughout term, setting up assignment submission, coordinating and moderating assignment and exam marking, handling special cases of assignment submissions/marking, processing special considerations and disability adjustments, entering marks, testing, gathering evidence and discussing plagiarism cases, responding to student enquiries about marking schemes and feedback, and gathering material for grievance cases and marks reviews.

(d) *Consultation* – $10 + 5N$ hours, where N is defined as above.

Consultation includes office appointments, moderation of the course forum, responding to student e-mail, and assignment consultations. Much of the additional work required for large classes (compared to small classes) consists of responding to forum questions from students.

(e) *Assignments* – 30 hours

This includes setting assignments and developing model solutions, developing automarking scripts and marking rubrics, and marks moderation.

(f) *Examination* – 30 hours

Examination is allotted 30 hours as standard, with assistance to be provided for additional hours of marking.

Course lecturing loads are multiplied by 1.3 for teaching a course with minor revision, by 1.5 for a course involving substantial revision, and by 2 for a new course completely designed from scratch.

2. Project-Based Courses

Project-based courses require students to design and implement a software project or complete a series of hardware lab exercises under the supervision and guidance of a mentor. While such courses often have fewer lectures than a lecture-based course, the time and effort preparing project specifications and supervising groups is deemed to compensate. Further, despite having no final examination, project-based courses have comparable assessment to lecture-based courses, in that projects are assessed at multiple stages throughout term (similar to assignments), and there is a major assessable team demonstration and presentation in place of the examination. For these reasons, a project-based course is allocated the same workload as a lecture-based course, assuming that the lecturer does the final assessment of all projects, up to a reasonable limit.

3. Tutorials and Labs

Workload allocated to lecturers undertaking tutorials and labs are in line with Schedule 2 of the Agreement. Each new tutorial hour is given 2 hours of associated work, each repeat tutorial hour is given 1 hour of associated work, and each lab hour is assigned only the 1 hour of contact. However, lab work in a course may entail additional workload hours for communication with students.

4. Coursework Thesis Supervision

The undergraduate thesis is divided into three courses (Thesis A, B and C). Postgraduate coursework students may undertake a research project (Research Project A, B and C). For each course, the supervisor load is 10 hours per student or team (where more than one student work together on a common project). Undergraduate special projects count as either 10 hours (Special Project A – 6 units) or 20 hours (Special Project B – 12 units). There is a cap of 4 undergraduate thesis students or teams per staff member in any one term.

5. Staff Teaching Loads

Staff loads are measured for periods of one academic year. A full time teaching and research staff member is expected to spend 644 hours (0.40 FTE) on teaching over the course of a year, normally 322 hours (0.20 FTE) per term in each of two terms a year. Full time education focused staff are expected to spend 1046.5 hours (65%) on teaching over the course of a year, which is typically made up of 349 hours (around 22%) for one course in each of three terms. However, staff may, by arrangement with the Deputy Head of School (Education), spread their teaching workload flexibly across any number of terms (including summer), or have a greater load in one term and a lesser load in another. This arrangement may especially suit part time or fractional employees.

The lecturer workload, on the basis that a single staff member lectures an entire course and fulfils all the duties listed in (a)–(f), and similarly for project-based courses, designs and does the final assessment of student projects, reaches the expected full time load of 0.20 FTE (rounded from 318 hours) for a course of size 351, as shown in Table 1 (highlighted cells show 0.20 FTE). For lecturers of smaller courses, additional teaching workload can derive from any number of lectures (in other courses), tutorials, labs, or supervision of coursework thesis students. Table 1 gives *illustrative examples* where a course lecturer is able to reach the expected 0.20 FTE teaching load by taking 1–4 tutorials per week for 9 weeks (one new, up to three repeat) in either their own course or in another course (but has no labs or coursework thesis students).

Table 2 shows *illustrative examples* for a teaching and research academic who supervises coursework thesis students. For simplicity, this table assumes that the 30 hours of student supervision (per student or team) are distributed over the usual 2 teaching terms at 15 hours per term, rather than over the usual 3 terms during which the student takes Thesis A, B and C.

Where a staff member's teaching load is higher than the required amount (40% FTE for teaching and research staff, 65% for education focused staff, less reductions for high amounts of leadership/service – see below), admin support can be requested to cover the hours in excess. **However, no LiC duties may be delegated to admin support staff.**

Table 1: Staff Load (Hours) for Lecturer of 1 Course + Tutorials

Course Size	Staff Load	1 Tutorial	2 Tutorials	3 Tutorials	4 Tutorials
1–50	248	275	293	311	329
51–100	258	285	303	321	339
101–150	268	295	313	331	349
151–200	278	305	323	341	359
201–250	288	315	333	351	369
251–300	298	325	343	361	379
301–350	308	335	353	371	389
351–400	318	345	363	381	399
401–450	328	355	373	391	409
451–500	338	365	383	401	419
501–550	348	375	393	411	429
551–600	358	385	403	421	439
601–650	368	395	413	431	449
651–700	378	405	423	441	459
701–750	388	415	433	451	469
751–800	398	425	443	461	479

Table 2: Staff Load (Hours) for 1 Course + Coursework Thesis Supervision

Course Size	Staff Load	1 Student	2 Students	3 Students	4 Students
1–50	248	263	278	293	308
51–100	258	273	288	303	318
101–150	268	283	298	313	328
151–200	278	293	308	323	338
201–250	288	303	318	333	348
251–300	298	313	328	343	358
301–350	308	323	338	353	368
351–400	318	333	348	363	378
401–450	328	343	358	373	388
451–500	338	353	368	383	398
501–550	348	363	378	393	408
551–600	358	373	388	403	418
601–650	368	383	398	413	428
651–700	378	393	408	423	438
701–750	388	403	418	433	448
751–800	398	413	428	443	458

6. Online Teaching

Online teaching is new to the School. An online course is typically part of a UNSW Online Masters program with courses run over a 6 week "hexamester". Teaching Computer Science online is different from teaching Business or Mathematics because it requires significant lab-based practical work. An online Masters course is not equivalent to a standard lecture-based or project-based CSE course, as student workload is 90–120 hours compared to 150 hours for a CSE course. In addition, online courses typically have no prerequisites. This means that all CSE online courses are essentially new courses, even when derived from an existing course.

Teaching practices are evolving in the light of experience, and all content must be of high quality to meet student expectations. Teaching is not by standard lectures and tutorials, rather there is a mixture of lecture presentations, video tutorials, self-guided exercises, quizzes, assignments, projects, exams, etc. Each course may need a different mix of types of content. The work teaching an online course is divided into *production* and *delivery*. Production is typically done by a team of "course designers" including an academic staff supervisor responsible for academic quality. Content is intended to be reused for multiple offerings, while delivery is done for each course offering by a "course convenor" and "online tutors". Every course designer needs substantial assistance in pedagogy and technologies for the first time teaching an online course, which should be provided in addition to course production.

For these reasons, it is not currently possible to give a common workload formula for teaching an online course, as with standard lecture-based and project-based courses. Accordingly, this aspect of the workload model should frequently be revised as the nature of the work becomes clearer. Until such time, the workload hours for each course should be agreed in advance. Following is a proposed model identifying the scope of required work.

(a) *Production*

Production involves content design, organization and development of learning resources (including assessment items), liaison with UNSW Online for quality assurance, and coordination across faculties for jointly run courses. First time online course designers need guidance on appropriate pedagogical approaches and technologies for Computer Science. In addition, if, as an example, 150 hours is suitable for content production for an already designed online course, each CSE course being a new course should require double this amount (300 hours) for first time development, in line with multipliers for standard courses. Furthermore, there should be an allowance for updating course content for each subsequent offering (this could be expressed as a percentage, for example 10% or 20% of the content).

(b) *Delivery*

Each course offering is supervised by a course convenor who oversees the running of the course, and takes responsibility for academic standards, general course administration, and setting assessment items. The course convenor should produce a course overview and weekly introduction videos and hold an online welcome session, and work with the program director and course designers to update learning resources and revise assessment to ensure integrity.

Each online tutor conducts online "tutorials" of 30 students, with work allocated as for tutors as in Schedule 2 of the Agreement (one hour preparation for each tutorial plus one hour associated work for each tutorial or repeat tutorial). Each online tutor also does course administration and consultation including moderating a course forum, answering student e-mail, troubleshooting technical problems, and coordinating with other tutors and the course convenor, and marking of assignments and exams, counted by the hour.

Leadership/Service

A full time staff member, both teaching and research and education focused, is expected to spend 322 hours (0.20 FTE) on leadership/service per year, pro rata for part-time or fractional appointments. Leadership/service encompasses school/university commitments, school management and professional service as follows. As a general principle, the allocation of school management roles should be made with the aim of sharing the load equitably amongst staff members of the School.

(a) *School/university commitments* (5%)

This includes attendance at school/education committee meetings, graduations, prize ceremonies, info/open days, visitor hosting, interview/promotions panels, reading university policies and procedures, learning university software and systems, university training modules and surveys, staff induction, coursework thesis assessment, research student review panels and annual performance reviews.

(b) *School management* (up to 50%)

This includes the various required management roles listed in Table 3.

(c) *Professional service* (5–15%)

This includes conference/journal/grant proposal reviews, conference/workshop organization, editorial boards, professional society/peak body work, thesis examinations, project reviews.

Table 3 shows the full year FTE loads (loads apply pro-rata to any part of the year) for the current management roles within the School. Loads may be distributed between multiple staff members either by splitting the required work into different tasks that are done by different people, or by sharing the volume of work done over different time periods during the year. The loads in Table 3, in some cases, reflect the current high student numbers in the School, and will need revision as student numbers and the nature of the work change. A "position description" for each role should be developed and maintained, in consultation with the Head of School, in order to properly reassess loads as circumstances within the School change.

Staff are expected to regulate their contribution to professional service so that their overall leadership/service load is 20% where this is possible given their school management load. That is, staff whose combined load from school/university commitments and school management does not exceed 15% are expected to contribute the whole shortfall in load to professional service. Staff whose combined load from school/university commitments and school management roles is greater than 15% are assumed to limit their contribution to professional service to 5%.

Staff whose leadership/service workload (combining school/university commitments, school management and professional service) exceeds 20% (equivalently, those with school management loads higher than 10%) receive a reduction in teaching load (in the case of teaching and research staff) or education load (in the case of education focused staff) by the amount of the excess above 20%. This also applies to part-time and fractional staff.

Overriding this, full time staff contributed in-kind to organizations external to the School, such as CRCs and research centres, in roles that include significant research management, receive a discount of 1/6 of their teaching load (from 0.40 FTE to 0.33 FTE) if that contribution is at least 0.50 FTE, 1/3 of their teaching load if that contribution is at least 0.60 FTE (from 0.40 FTE to 0.27 FTE), and 1/2 of their teaching load (from 0.40 FTE to 0.20 FTE) if that contribution is at least 0.70 FTE, with no requirement for school management.

Table 3: School Management Loads

School Management Role	Load
Head of School	0.50
Deputy Head of School (Education)	0.30
Associate Head of School (Education)	0.30
Deputy Head of School (Research)	0.20
Associate Head of School (Research)	0.20
Research Group Head	0.05
UG CS Director of Studies	0.20
UG SENG Director of Studies	0.15
UG CE Director of Studies	0.10
UG BINF Director of Studies	0.10
UG Thesis Coordinator	0.15
CS Co-op Program Coordinator	0.10
SENG Co-op Program Coordinator	0.10
Industrial Training Coordinator	0.10
Director Online Education	0.20
PG Coursework Director of Studies	0.20
PG Research Coordinator (Admissions)	0.10
PG Research Coordinator (Candidature)	0.15
HREA Panel Chair	0.10
Ethics Officer	0.10
Grievance Officer	0.10
Equity and Diversity Officer	0.05
Faculty International Committee	0.05
Faculty External Relations Group	0.05
Humanitarian Engineering Champion	0.05
University Re-enrolment Appeals Committee	0.10
ICPC Programming Competition Coach	0.10
School Meetings Chair	0.02
School Seminars Host	0.02

Special Studies Program/Internal Release

A staff member may be approved to take 3–6 months of SSP/Internal Release. Teaching and research staff normally take SSP/Internal Release over a term in which they would otherwise be teaching (Clause 24.4(c) of the Agreement). The staff member will be deemed to have met required teaching/education loads for the periods of overlap of the SSP/Internal Release with their usual periods of teaching at the rate of their usual teaching/education load for those periods (typically 40% for teaching and research staff and 80% for education focused staff), and leadership/service loads (typically 20%) for the full period of the SSP/Internal Release.

Workload Allocation, Monitoring and Review

A subcommittee of the Education Committee, comprising at least the Deputy Head of School (Education) and the Associate Head of School (Education), will be responsible for workload allocation, monitoring and review in accordance with this workload model. Each year, this committee will convene a special meeting to allocate teaching and school management roles for the upcoming year, during which it will endeavour to balance teaching and school management workloads, both for individuals across successive years (as required by Clause

24.2(h) of the Agreement), and between individuals in the School in the same year. As part of this process, the committee will reconsider the loads for school management roles, in particular whether the position descriptions and the loads in Table 3 need to be modified as student numbers and the nature of the work change. The committee may meet at any other time to consider and recommend changes to the workload model.

To support the fair and transparent allocation of work, any staff member will at any time be able to view the breakdown of their teaching workload calculation according to this model, alongside the similar breakdown of any other individual staff member, in accordance with Clause 24.2(b) of the Agreement, and may request a review of their workload, initially via this committee, in accordance with Clause 24.5 of the Agreement.

Special Provisions

1. Early Career Academics

Early career academics, defined as staff within 7 years of their PhD graduation, receive a reduction of workload of 20%. This time is made available for early career researchers to establish a track record. Teaching and research staff therefore allocate time as follows:

- Teaching – 32%;
- Research – 52%;
- Leadership/service – 16%.

Education focused early career academics may conduct research with the prior approval of the Head of School. In such a case, they are expected to allocate time as follows:

- Teaching – 52%;
- Education related activities – 12%;
- Research – 20%;
- Leadership/service – 16%.

2. New Staff

Staff new to the School (not previous casual employees) receive a reduction in workload of 10% for their first year of employment, unless they are early career academics who receive a 20% reduction. This means new teaching and research staff in their first year of employment allocate time as follows:

- Teaching – 36%;
- Research – 36%;
- Leadership/service – 18%.

New education focused staff in their first year of employment allocate time as follows:

- Teaching – 58.5%;
- Education related activities – 13.5%;
- Leadership/service – 18%.

3. Special Events

A staff member wishing to take on major professional service activities (such as conference organization) must apply to the Head of School in advance of making any commitments in order to receive a compensatory reduction in teaching and/or leadership/service load.