UG3 assessment is broken: how can we fix it?

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1 How do we assess UG3 work at present?

All-Informatics UG3 students do:

<table>
<thead>
<tr>
<th>Points</th>
<th>Course</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>System Design Project</td>
<td>individual and group work, no exam</td>
</tr>
<tr>
<td>10</td>
<td>an individual project</td>
<td>individual work, no exam</td>
</tr>
<tr>
<td>10</td>
<td>Professional Issues</td>
<td>15% essay, 85% exam</td>
</tr>
<tr>
<td>8 x 10</td>
<td>courses</td>
<td>mostly 25% coursework, 75% exam</td>
</tr>
</tbody>
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Exceptions to the 25% coursework, 75% exam rule include Computer Communications and Networks (40% coursework), Computer Security (20% coursework), and probably one or two others that I’m forgetting.

2 What is the evidence that this is broken?

As course organiser I see three main problems, each of them serious.

1. There is a persistent tendency for students to spend all their non-contact study time on coursework, and none on going through lecture notes, background reading or any other private study. This has been known anecdotally for a long time. It was apparent in the pilot Work Diary study I did in 2006/7. For the UG3 cohort in 2007/8 I did everything I could think of to drive home the message that private study was at least as important as coursework. Thus when student filled in work diaries that year they knew that the “right” answer was a split between time spent on assignments and time spent on private study. Nevertheless, the full Work Diary study in 2007/8 confirmed this pattern. Most students spent a reasonable number of hours on their work in total (median was around 35 hours for all-Informatics students, pro-rata for joint degree students) corresponding to regarding studying as a full-time job. There was no evidence that students were systematically over-working. However, the vast majority of students attributed no work time over a full week to anything other than a specific piece of coursework or a contact hour. Even the total over all students was not far off zero.

If in a particular course, it’s impossible for the student to do all the coursework without achieving all the learning objectives, this may not be a problem. However, that’s the exception rather than the rule.

2. Staff are routinely failing to get marked work back to students within the two weeks we aim for. Typically, students get little or no feedback on the assignment until their own work is returned. Even if that is a “mere” two weeks after the deadline, enough has happened since the student actually had the problems they needed help with that feedback is then not very much appreciated. (We got very low marks in the student survey for all aspects of feedback, including promptness and helpfulness.) Yet, sometimes, marking a piece of work
is not actually very helpful: e.g. providing worked solutions and/or the opportunity to meet with the lecturer to discuss problems might be more effective.

3. Plagiarism and the effects of the fear of plagiarism. We know that we have a small but steady stream of cases of copying from other students and copying from the web. By its nature the use of any of the many contract cheating services such as Rentacoder is almost impossible to detect, but the following article suggests that we should be worrying about this too. http://www.ics.heacademy.ac.uk/resources/assessment/plagiarism/cheat_plagiarism.html Although we find relatively few incidences of provable plagiarism, many of us have had the experience of being pretty sure that more than a reasonable degree of collaboration had gone on, but not pursuing the matter. This is depressing and leads to a degree of cynicism about students in general which is probably not warranted for most of them.

Possibly even more deleterious than the plagiarism itself is the effect on students of knowing that plagiarism is an issue. They might learn more if they collaborated more, but that’s difficult to do while still staying clear of plagiarism. Fundamentally the problem is that our coursework is trying to serve two purposes which are in tension: supporting learning, and assessing what has been learned.

3 What could we do about it?

3.1 Tell students to spend less time on coursework

Tried that. Doesn’t work.

3.2 Tell staff to set coursework that can be done in the number of hours specified, with explicit time allocation

Tried that. Doesn’t work.

3.3 Reduce the number of hours and marks for coursework

E.g., settle on a normal 10% allocation of marks to coursework with the course descriptors specifying around 10 hours to be spent on coursework for a typical 10pt course.

Advantages incremental change, relatively easy to do.

Disadvantages runs the risk of having coursework expand to fill the time available; if students still didn’t spend any time on private study, the material not covered in the coursework would not get learned and students would learn even less than they do now.

3.4 Some scheme of counting only the best courseworks

E.g., a typical course sets two equally weighted courseworks, as now, with deadlines and marking as now, but students are told that only their best mark out of the two will count, with the percentage allocated to coursework being reduced as above.

Advantages Conceivably, might make it easier for a student to “let go” the end of the second assignment in favour of private study, if they have already done well on the first.
Disadvantages  Very complicated. Puts strong constraints on the kinds of courseworks that can
be set (what if your course has only one assignment/has ten assignments/has two assignments but
they aren’t equally weighted?) Students may feel that they still have to do all the coursework,
still “don’t have time” to do anything else, but get less credit for coursework. Requires prompt
marking of early assignments if students are to use their marks on them to decide whether to do
later ones.

3.5 Limited spreading of courseworks over semester boundaries

*added following suggestion from Gillian Hayes*

Gill writes: “Let students nominate up to two of the last courseworks of Semester 1 to hand
in up to the start of semester 2 or at the end of week 11 in semester 1. Or insist that all courses’
final deadline be at the end of week 9 and allow students to nominate two to hand in at the end
of week 10.”

Disadvantages  Adds some flexibility that is tailored to the individual student – they can choose
which courseworks they need extra time on, and that will differ from student to student.

Disadvantages  Very complicated. Delays feedback: but even now, the course is over by the
time students’ final assignments are marked, so maybe this isn’t crucial. Hard on staff, since the
time when all assignments are in is delayed, possibly until Semester 2. Any version with submission
delayable until after week 10 is not compatible with the dedicated time for project work that is
supposed to exist after then.

3.6 Midterms instead of for-credit coursework

i.e. a “mini-exam” half way through the semester, run in lecture time, and counted towards the
final mark instead of coursework.

Disadvantages  Hard (impossible, e.g. at appeal?) to defend a for-credit exam-like thing that
wouldn’t have the checks and balances we now have for exams, e.g., internal scrutiny and external
examiner scrutiny of papers; a room with students sitting far enough apart that they can’t see one
another’s papers. Would not support the kind of learning that students do involving computers.

3.7 Make all coursework not-for-credit

i.e. set work based purely on what will best support students’ learning (not on what will distinguish
the best students from the worst), don’t use for formal assessment at all. Consider on a case-by-
case basis whether to offer to mark individual students’ work for feedback or give feedback in some
other way.

Disadvantages  Makes explicit that students are responsible for allocating their time so as to learn
as well as they can. Allows collaboration. Allows different kinds of feedback and joint learning
(e.g., lecturer starts a wiki on problems and solutions relating to a coursework; students can
choose when and whether to consult it, and can add to it). Makes it unnecessary to mark all
the work that every student does, thereby allowing lecturers to give more prompt feedback when
it’s specifically useful, e.g., when an individual student asks for feedback. Allows more open-
ended/flexible/interesting coursework, as usefulness for assessment and ease of marking become
less important. E.g., assortment of easy exercises and hard ones, so that students who are following
easily skip straight to the hard ones while those who are struggling start with the easy ones.
Disadvantages Radical change, those are always hard. Makes it hard for us to realise when a student is struggling – but be honest, we don’t use that kind of information now. Might make it harder for a student who is struggling to realise it early? (But it’s rare for students to get individual feedback on coursework earlier than week 6/7 anyway.) Hard on exam-phobic students. (We already wonder about plagiarism, as well as about exam phobia, when a student does much better in coursework than in exam; but a student who knows they have done well in coursework and that that counts may go into an exam feeling more confident, which may help.) Disorganised students might simply do nothing.

3.8 Make all coursework pass/fail

i.e. make submission of a serious attempt at each piece of coursework compulsory, on pain of failing the course, but let how good the serious attempt is make no further difference. For most courses, which set more than one piece of coursework, there would be a question about whether to require all coursework to be submitted or just one out of two, or whatever.

Advantages Would discourage students from spending many hours trying to get the absolute maximum of marks, where the time would be better spent on other work. Not needing to give a precise mark would make marking quicker, enabling work to be returned more promptly.

Disadvantages Difficult to treat borderline cases fairly, e.g. if someone is just short of making “a serious attempt”, they fail the course, in contrast to the current situation where it’s perfectly possible to get 0 for coursework and still pass. Weak students might be the least able to tell when their attempt would be considered serious, leading to the very students who most need private study continuing to spend all their time on coursework. (Incidentally, combines so badly with “no late submission” that we’d probably have to drop that policy: it would be unacceptable for a student who submits a piece of coursework 1 day late to fail the course no matter how well they learn the material.)

Variant added following suggestion from Amin Coja-Oghlan

Mark work as at present, and have a pass/fail per course (not per assignment) at 50% of the available marks. This has most of the same advantages and disadvantages: it does require the same marking precision as at present, but it might allow a student who does very badly on one assignment to make it up by doing well on another.

3.9 Reclassify our 10 point courses as 20 points

added following suggestion from Mark Steedman

Let students do four 20pt technical courses rather than eight 10pt courses.

Advantages Allows students to do less context-switching between courses, making it easier for them to use their time effectively. We could make this change without doubling the amount of material, and/or the amount of coursework, in a course.

Disadvantages If a 20pt course contains less than twice the material in a 10pt course, this will be seen, rightly, as dumbing down; this is problematic given that the best UG3 students do cope with the learning we expect of them currently, and given the evidence that students do not on average work an unreasonable amount. A 20pt course with less than twice the coursework load that a current 10pt course has amounts to the same as section 3.3. Reduces the breadth of a student’s education. Reduces the flexibility that students have in choosing 4th year courses.
4 Which courses would this apply to?

Most of the above options are quantised at the course level. E.g. if we adopt “reduce the number of hours and marks for coursework” we have a choice about whether to do that on all technical courses, compulsorily; or offer it to lecturers as an option; or make it the default, but allow lecturers of individual courses to make an argument for their course being exceptional, e.g., containing a learning objective the achievement of which is impossible to assess by timed examination. In principle there are very many combinations, but in practice we’ll want to limit complexity of the overall UG3 offering. A danger to guard against is that if some courses (A) take steps to free up time for private study, but many courses (B) continue to have coursework as now, then that time that A courses freed up will simply be absorbed into coursework of the B courses. Then the effect would be that students in A courses learned less than students in B courses and the change would be seen to have failed.

5 Recommendation

The course organiser’s preference is for “all coursework not-for-credit” to be the strong default, i.e. with individual courses permitted to be exceptions but not many and only with a good argument.

I think this might in itself help students to use their time better. However, to get full benefit from this, course lecturers would have to rethink coursework from first principles, considering issues like what to set, how much guidance to give on when to do it, whether to mark it (for all students, or on request), what kind of feedback to give, how to fit this with tutorials if appropriate, etc.