First Year Informatics 2013:
Options for Supporting Increased Student Numbers

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Summary

This paper outlines the implications for first year Informatics courses of a proposed increase in student numbers for the September 2013 intake. It also summarises the recommended actions following discussions with the first year teaching and admin staff:

In the short-term, we propose retaining the existing course structure and simply increasing the number of students per session wherever possible. However, this will not be straightforward, since the proposed numbers will exceed fixed limits on (for example) room sizes. In some cases, this will not be possible, and we will need to increase the number of sessions, or make changes to the current practice.

If these larger numbers are to continue (or even increase further), then we should start considering longer-term alternatives which might be more sustainable, and help to restore the student experience.

1 Student Numbers

The current Informatics 1 intake (2012) is 167. We believe that the current sustainable maximum is about 180. In the past, we have had an intake of 190, but this was offset by a smaller intake the following year. This year (September 2013), we are being asked to consider an intake of 195. This is higher than Maths, Physics and Chemistry; but below the estimates for Geosciences (286), Biology (369) and Engineering (435). The previous year’s figures are:

<table>
<thead>
<tr>
<th>Year</th>
<th>Inf</th>
<th>FP</th>
<th>Scot</th>
<th>RUK</th>
<th>REU</th>
<th>OS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>167</td>
<td>222</td>
<td>61</td>
<td>17</td>
<td>66</td>
<td>23</td>
</tr>
<tr>
<td>2011</td>
<td>117</td>
<td>140</td>
<td>39</td>
<td>5</td>
<td>51</td>
<td>22</td>
</tr>
<tr>
<td>2010</td>
<td>99</td>
<td>128</td>
<td>44</td>
<td>4</td>
<td>36</td>
<td>15</td>
</tr>
<tr>
<td>2009</td>
<td>190</td>
<td>233</td>
<td>64</td>
<td>35</td>
<td>71</td>
<td>20</td>
</tr>
<tr>
<td>2008</td>
<td>157</td>
<td>197</td>
<td>52</td>
<td>31</td>
<td>66</td>
<td>8</td>
</tr>
</tbody>
</table>

First year courses typically attract 30-40% from outside the School - this year, Inf1-FP has around 220 students in total. This means that we may expect over 250 students on Inf1-FP next year.

2 Implications

2.1 Lectures

The only difficulty in increasing the size of the lectures would be the availability of suitable lecture theatres. Sufficiently large venues in the central area are:

<table>
<thead>
<tr>
<th>Location</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT LT4</td>
<td>300</td>
</tr>
<tr>
<td>AT LT5</td>
<td>303</td>
</tr>
<tr>
<td>DHT LTA</td>
<td>350</td>
</tr>
<tr>
<td>DHT LTB</td>
<td>250</td>
</tr>
<tr>
<td>DHT LTC</td>
<td>250</td>
</tr>
<tr>
<td>George Square Theatre</td>
<td>473</td>
</tr>
</tbody>
</table>

The room booking system opens in March for the creation of requests for next session, and we should start to receive confirmation of 2013/14 room bookings from the beginning of June. However, if we request rooms based on estimated, rather than actual class numbers, there is no guarantee that we will be allocated the rooms that we request.

2.2 Exams

Capacity to handle all FP/OP students for a single online practical exam has already been exceeded - this year it was necessary to set two papers for each of these courses, so the proposed increase would present no new difficulties - except, of course, for the proportional increase in marking and administrative effort.

The computing staff, together with IS, have been investigating various options which would allow us to run these exams using central facilities. None of these options currently seem to be viable, but changes in the course assessments, or some new approach may make this an option in the future for one or both courses. This would allow us to return to a single exam per course.

\[ \begin{align*}
\text{Inf} &= \text{Total number of INF students} \\
\text{FP} &= \text{Total number of students on INF1-FP} \\
\text{Scot} &= \text{Number of INF students from Scotland} \\
\text{RUK} &= \text{Number of INF students from rest of UK} \\
\text{REU} &= \text{Number of INF students from rest of EU} \\
\text{OS} &= \text{Number of INF students from elsewhere} \\
\end{align*} \]

1 Perdita Stevens, Don Sannella, Ian Stark, Henry Thompson, Michael Rovatsos, Gillian Bell

A full list is available here: http://bit.ly/134xBMa

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2.3 Labs

Most FP lab sessions are optional, and could probably absorb the proposed increase in numbers. There is currently one compulsory session (in week 2) but this is run every afternoon in order to handle $5 \times$ lab capacity.

The OP lab sessions are currently compulsory, but there is a possibility that they could be made optional, in which case they would probably absorb the proposed increase. However, we would want to reserve the option to re-instate the compulsory labs if this resulted in lots of students becoming disengaged. And we would not want to turn away students who would like to attend the lab sessions, but were unable due to lack of space. This means that we would need to reserve the capacity to add both additional space and staff if necessary.

The CG lab sessions are weekly, last 2 hours and involve a lot of staff interaction. The biggest available lab is already at capacity with this year’s enrolment of 85. If that rises proportionately, we would have to run two sessions, with different staff, who would have to be familiar with the material to a greater degree than, say, tutors.

The necessary software for FP has now been installed in the central labs, making them usable for students private work. Further collaboration with IS would be necessary to make the software available for OP or CG. It is not clear whether this might provide an option for running larger lab sessions.

2.4 Tutorials

The following table shows the current number of tutorial groups for each course:

<table>
<thead>
<tr>
<th>Course</th>
<th>Number of groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>INF1-DA</td>
<td>17</td>
</tr>
<tr>
<td>INF1-CG</td>
<td>7</td>
</tr>
<tr>
<td>INF1-CL</td>
<td>19</td>
</tr>
<tr>
<td>INF1-FP</td>
<td>19</td>
</tr>
<tr>
<td>INF1-OP</td>
<td>16</td>
</tr>
</tbody>
</table>

It is already difficult to recruit sufficient qualified tutors. However, the INF1-OP tutorials involve self-chosen and guided group projects and we would be very reluctant to attempt this with a larger group size, so we would need additional tutors. These groups would be able to continue to use the existing tutorial rooms in AT.

Tutorials for the other courses could be increased in size (from 12 to 14-15), but this would require larger rooms. Tutorial rooms in the central area have previously been easier to come by than large lecture theatres, however the personal tutor scheme means that they are now under greater demand for group meetings. If our own rooms are too small for us to use, we will also be under increased pressure to release them as centrally bookable space, and this would have a significant impact on the Informatics student community.

3 Other Options

The following options were also considered:

- We could limit access to first year Informatics courses for students outside of the School.
- We could replace the course-linked tutorials with a cross-course tutorial (reducing the contact time). This may be insufficient for some courses (FP).
- We could replace tutorials with 50-60 student “example classes”. This would obviously have an impact on the student experience, and would work better for some courses (DA/CL) than others (OOP and CG would not be possible in the current form).
- It may be easier to run larger tutorial groups if these were grouped by ability.

In the longer term, we may want to consider more creative approaches to maintaining the student experience in the face if increasing numbers - for example, the use of peer support, more use of online technology, and ways of making students better prepared for their tutorials - other schools (eg. Psychology) already have too many students to support, for example, lab sessions.

4 Proposals

- Reserve larger lecture theatres for teaching.
- Make OP labs optional, but reserve capacity to re-instate the compulsory labs if necessary.
- Double the CG labs with associated implications for staff and lab time.
- Increase the number of tutorials and associated tutors for OP.
- Increase the size of the tutorials for the other courses, reserving larger tutorial rooms outside of Informatics where necessary.
- Initiate discussions on a longer-term approach.