

Principles and challenges for a new undergraduate Informatics curriculum (summary version)

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1 Guiding principles

The following principles should guide any changes to the undergraduate curriculum.

- A1) All students (including those on joint degrees) should graduate with strong programming abilities, and confidence in their own programming abilities.
- A2) All students should graduate with a solid grasp of core computer science and/or software engineering knowledge areas (as defined with reference to external recommendations, such as the ACM guidelines *Computer Science Curricula 2013*—henceforth **CS2013**. Joint degree students could miss out on a few of these but not too many.
- A3) In addition to core courses, all students should have the opportunity to explore outside subjects as well as specialized areas within Informatics. They should be exposed to the unique flavor of Informatics at Edinburgh.
- A4) The curriculum should aim to be inclusive of all students, regardless of previous programming experience, demographic factors, or special needs.
- A5) Both individual courses and the curriculum as a whole should focus as much on *ways of thinking and working* as on specific knowledge areas. That is, we should aim to develop critical “soft skills” (graduate attributes) such as: ability to communicate ideas, work in teams, manage time, and deal with uncertainty; general problem-solving skills and independent learning.
- A6) Integrate discussion of social and professional issues throughout the curriculum, as relevant within the context of specific knowledge areas and applications.
- A7) The curriculum should be deliverable within the constraints imposed by resource limitations (ultimately, the time available from lecturers and teaching support staff, and the time available to students).

2 Challenges

- D1) Staff resources.
- D2) Semester time.
- D3) Tensions between UG and PGT curricula (and resources).
- D4) Tensions between on-campus and distance learning curricula (and resources).
- D5) Heterogeneous student population.
- D6) Feedback and assessment.