Interdisciplinary teaching of computing (case study: Mathematics)

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Muddle through — “they must have learnt some of this at school”, and the Numerical Analysis (or Statistics) lecturer can fill in the gaps.

The current (as opposed to planned) school curriculum does not teach programming, and Computing A-level has less than 5% the uptake of Mathematics.

Teach it in Mathematics, generally in Numerical Analysis. This generally meets the aims of the course, but not the wider aims.

Have it taught as service teaching by Computer Science. This generally meets the wider aims, but is disconnected from the rest of the curriculum and, worse, is perceived as such by the students.
Joint curriculum development team for an integrated curriculum
Choose the vehicle for the students
* For us, this was MatLab
Team teaching (alternate lectures) and tutoring
A custom textbook covering all aspects
* Note that these days this is feasible for > 80 students
Inter-related Maths/Computing exercises
It’s actually hard work
Benefits

1. Fewer, more positive, “why are we doing this” questions, and a better answer!
2. Marked improvement noted by 2/3 year Numerical Analysis lecturers
3. R programming has ceased to be an issue for Statistics lecturers
* These are the immediate customers of Year 1 courses
4. Positive notes from sandwich students
   “While only a small number use MatLab directly, a common statement is that the programming skills they learnt in first year through MatLab and R helped them in their placement” — Placement Officer.