Curriculum Committee
Minutes

February 4, 2008

Attendees: Tom Doeppner, John Hughes, Anna Lysyanskya, Steve Reiss, John Savage (Chair), Warren Schudy
Guest: Philip Klein

1. Approval of Minutes of January 24 and 28 Meetings
   The minutes were approved with minor changes.

2. Discussion of Philip Klein’s Proposal for a Linear Algebra Course
   Philip proposes to teach a linear algebra course for computer science concentrators that would satisfy the linear algebra requirement for ScB concentrators as well as teach this important topic in a computer science context. There are many areas of computer science in which linear algebra is used. He would cite computer science applications as a means to motivate our students.

   Philip said that this course, which he proposes to teach next fall, is a partial substitute for the two semester mathematical foundations course that he and Tom Dean were preparing before Tom left the faculty. He envisions that at some future time his course might be augmented by a second mathematical foundations course.

   Philip said that three linear algebra courses are currently taught at Brown, namely, Math 0520, 0540, and Applied Math 1170. Linear algebra is also taught in Applied Math 0330 and 0350 and Physics 1720. His course would cover a broad range of topics in linear algebra but would not cover basic material such as Gaussian elimination or LUP factorization, covering material relevant to problems in computer science instead.

   In response to a question from Tom, Philip said that he had not yet surveyed colleagues to determine which topics they would consider most valuable, something that he will do.
Philip was asked whether the course would be attractive to students concentrating in other areas. Philip didn’t have the answer but John felt that it could substitute for Math 0520.

We agreed to give provisional approval to Philip’s course but ask that he conduct a faculty survey and then return with the appropriate forms completed for submission to the CCC. We expect that we can consider the course next week.

3. Discussion of the NUS/Brown Concurrent Bachelors/Master’s Degree Program

We revisited the proposal for this concurrent degree program. We decided that clarity and correction are needed in a few places.

At the bottom of page three we recommend deletion of the role of an advisor in supervising a thesis or project and replace this by adding the phrase “in a CCMB-approved area directed by a CCMB advisor” to the research thesis and project options on page four under **advanced component**. Also, we recommend the addition of the phrases “(six courses)” and “(two courses)” to the headings **basic component** and **advanced component**, respectively. With these changes and a few typographical corrections, we approve the proposal for a concurrent Brown/NUS degree. If Franco approves (he does), the document will be sent to the chair for CS faculty approval and transmittal to the Graduate Council.

4. Discussion of Overlap Between CS4 and AM16

Roberto asked this committee to formulate a response to an issue raised by Jan Hesthaven of Applied Mathematics with Alan Usas who is teaching CS4. It is a potential conflict between the content and goals of CS4 and AM16. Jan is having trouble distinguishing between the two courses. He finds it difficult to offer advice to students.

We examined the description of AM16 at mocha.cs.brown.edu (found by searching for apma0160) and consulted the current CS4 outline provided to us by Alan Usas. Based on this information we concluded that AM16 teaches programming in MATLAB using applications for solving mathematical problems. While CS4 also teaches programming in MATLAB, its emphasis is on programming methodology, not mathematical problem solving; it has only three lectures related to the latter, one on polynomials, curve fitting and interpolation, a second on simple problems from numerical analysis, and a third on probability and statistics. CS4 also devotes 7 lectures to programming in C and has two lectures on graphical user interfaces in MATLAB. In light of this comparison, we see the courses serving different audiences. John will convey this understanding to Jan Hesthaven and seek his feedback.