CURRICULUM CHECK SHEET
Bachelor of Science in
Computational Mathematical Sciences
Arizona State University
2002-2003

MAJOR REQUIREMENTS

The concentration in Computational Mathematical Sciences requires a minimum of 36 semester hours of coursework in Mathematics and Statistics, plus a minimum of 21 semester hours in Physics, Computer Sciences and other sciences, for a minimum of 57 semester hours of coursework related to the major.

1. Core courses in mathematics:

   MAT 270, Calculus with Analytic Geometry I
   MAT 271, Calculus with Analytic Geometry II
   MAT 272, Calculus with Analytic Geometry III
   MAT 274, Elementary Differential Equations
   MAT 300, Mathematical Structures
   MAT 342, Linear Algebra
   Subtotal: 21 semester hours

2. Computing requirement:
   CSE 200, Concepts of Computer Science
   CSE 210, Data Structures & Algorithms I
   CSE 310, Data Structures & Algorithms II
   MAT 420, Scientific Computing
   Subtotal: 12 semester hours

3. Physics requirement:
   PHY 121, Univ. Physics I: Mechanics
   PHY 131, Univ. Physics II: Electricity & Magnetism
   (The associated laboratory courses, PHY 122 and PHY 132, are strongly recommended.)
   or PHY 150 Physics I
   PHY 151, Physics II
   Subtotal: 6 to 8 semester hours

4. Four advanced courses in mathematics and statistics chosen according to the following menu:
   a) one course to be chosen from the following list:
      MAT 371, 460
   b) substantial computing component:
      MAT 419, 421, 423, 425, STP 429, MAE 471
      (Other courses may be used upon advisor approval)
   c) one course chosen from either a) or b) or from:
      MAT 372, 427, 451, 452, 461, 462, 475
      STP 420, 421
   d) one course from any of a), b), or c), or any other 400-level MAT or STP course, subject to the restrictions below.
   Subtotal: 12 credit hours

5. Additional science requirement:
   A one-year sequence in some other science, chosen from Astronomy, Biology, Chemistry, or Geology.
   Allowable sequences include:
   BIO 181 and 182, General Biology;
   AST 321, Intro to Planetary & Stellar Astrophysics
   and AST 322, Intro to Galactic & Extragalactic Astrophysics;
   Any two of CHM 113-118 as allowed by the Chemistry Department;
   GLG 101 and 102, Introduction to Geology I and II;
   Other course combinations may be used upon approval of a departmental advisor.
   Subtotal: 6 to 9 semester hours

6. Advanced science or internship requirement:
   An advanced course in a science for which a one-year course sequence in the same science is required, or an internship, subject to advisor approval. Allowable courses include:
   a) any upper-division science or engineering course in the "related field" course list available in the Math Department.
   b) any upper-division course in plant biology (PLB prefix), chemistry (CHM prefix); microbiology (MIC prefix). Other courses may be used to satisfy this requirement on approval of a mathematics department advisor;
   c) MAT 484, Internship.

Restrictions:

1. MAT 370 and MAT 371 may not both be counted toward degree requirements in mathematics.
2. A minimum grade of C is required in all coursework used to satisfy major requirements.
3. MAT 310, MAT 362, MAT 370, MAT 485, STP 326 and ASU West MAT 411 may not be used to satisfy requirement 4d.