

CURRICULUM CHECK SHEET
Bachelor of Science in
Computational Mathematical Sciences
Arizona State University
2004-2005

MAJOR REQUIREMENTS

The degree in Computational Mathematical Sciences requires a minimum of 32 semester hours of coursework in Mathematics and Statistics, a minimum of 12 to 14 semester hours in science, and 9 semester hours in Computer Sciences, and a 3 hour advanced science course or internship/research credit for a minimum of 56 to 58 semester hours of coursework related to the major.

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| <p>1. Core courses:
 MAT 271, Calculus with Analytic Geometry II
 MAT 272, Calculus with Analytic Geometry III
 MAT 243, Discrete Mathematics or
 MAT 300, Mathematical Structures
 Subtotal: 11 semester hours</p> | <p>BIO 187 and 188, General Biology;
 BIO 193, The nature of Biological Science
 And BIO 188 General Biology II
 AST 321, Intro to Planetary &
 Stellar Astrophysics and
 AST 322, Intro to Galactic &
 Extragalactic Astrophysics and
 associated labs AST 113 and 114;
 Any two of CHM 113-118 as allowed by the
 Chemistry Department or CHM 114
 and 231 and 235;
 GLG 101 and 102, Introduction to
 Geology I and II and associated labs
 GLG 103 and 104;
 MIC 205, Microbiology or MIC 220,
 Biology of Microorganisms and
 MIC 206 Microbiology Laboratory
 MBB 245, Cellular and Molecular Biology
 and MBB 246 Laboratory
 PHY 121, Univ. Physics I: Mechanics
 PHY 131, Univ. Physics II: Electricity
& Magnetism. (and the associated
 laboratory courses, PHY 122 and PHY
 132,)
 PHY 150, Physics I and PHY 151, Physics
 II
 PLB 200, Biology of Plants and PLB 201,
 Laboratory
 Subtotal: 14 to 17 semester hours</p> |
| <p>2. Core courses in Computational Mathematics:
 MAT 274, Elementary Differential Equations
 or MAT 275, Modern Differential
 Equations
 MAT 342, Linear Algebra or
 MAT 343, Modern Linear Algebra
 MAT 420, Scientific Computing
 MAT 421, Applied Computational Methods
 (MAT 275 and 343 are recommended)
 Subtotal: 12 semester hours</p> | <p>Any two of CHM 113-118 as allowed by the
 Chemistry Department or CHM 114
 and 231 and 235;
 GLG 101 and 102, Introduction to
 Geology I and II and associated labs
 GLG 103 and 104;
 MIC 205, Microbiology or MIC 220,
 Biology of Microorganisms and
 MIC 206 Microbiology Laboratory
 MBB 245, Cellular and Molecular Biology
 and MBB 246 Laboratory
 PHY 121, Univ. Physics I: Mechanics
 PHY 131, Univ. Physics II: Electricity
& Magnetism. (and the associated
 laboratory courses, PHY 122 and PHY
 132,)
 PHY 150, Physics I and PHY 151, Physics
 II
 PLB 200, Biology of Plants and PLB 201,
 Laboratory
 Subtotal: 14 to 17 semester hours</p> |
| <p>3. Three advanced courses in Mathematics and
 Statistics:
 a) One of:
 MAT 362, 370, 371, 460
 b) Two of:
 MAT 351, 415, 416, 419, 423, 425, 447,
 451, 452, 455, 461, 462, 475, 476,
 STP 420, 421, 425, 427, 429
 Subtotal: 9 semester hours</p> | <p>PHY 121, Univ. Physics I: Mechanics
 PHY 131, Univ. Physics II: Electricity
& Magnetism. (and the associated
 laboratory courses, PHY 122 and PHY
 132,)
 PHY 150, Physics I and PHY 151, Physics
 II
 PLB 200, Biology of Plants and PLB 201,
 Laboratory
 Subtotal: 14 to 17 semester hours</p> |
| <p>4. Computing requirement:
 CSE 200, Concepts of Computer Science
 CSE 210, Data Structures & Algorithms I
 CSE 240, Introduction to Programming
 Languages or CSE 310, Data Structures &
 Algorithms II
 Subtotal: 9 semester hours</p> | <p>6. Internship, Research, or Advanced Science
 Requirement. One of the following
 courses:
 a) MAT 484, Internship
 b) MAT 493, Honors Thesis/Research
 c) MAT 494, Independent Study/Research
 d) One advanced course in science for which
 a one-year sequence in the same science
 is required.
 Subtotal: 3 semester hours</p> |
| <p>5. Science requirement:
 Two one-year science and lab sequences from the
 following list:</p> | |

Restrictions:

1. MAT 370 and MAT 371 may not both be counted toward major requirements in CMS.
2. Credit may not be earned for both MAT 274 and MAT 275 or for both MAT 342 and 343.
3. A minimum grade of C is required in all coursework used to satisfy major requirements.

