

**CURRICULUM CHECK SHEET**  
**Bachelor of Science in**  
**Computational Mathematical Sciences**  
**Arizona State University**  
**2003-2004**

**MAJOR REQUIREMENTS**

The degree in Computational Mathematical Sciences requires a minimum of 35 semester hours of coursework in Mathematics and Statistics, a minimum of 14 to 17 semester hours in science, and 9 semester hours in Computer Sciences, for a minimum of 58 semester hours of coursework related to the major.

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| <p>1. Core courses:<br/> MAT 271, Calculus with Analytic Geometry II<br/> MAT 272, Calculus with Analytic Geometry III<br/> MAT 243, Discrete Mathematics or<br/> MAT 300, Mathematical Structures<br/> Subtotal: 11 semester hours</p>   | <p>BIO 187 and 188, General Biology;<br/> BIO 192, The nature of Biological Science<br/> And BIO 188 General Biology II<br/> AST 321, Intro to Planetary &amp;<br/> Stellar Astrophysics and<br/> AST 322, Intro to Galactic &amp;<br/> Extragalactic Astrophysics and<br/> associated labs AST 113 and 114;<br/> Any two of CHM 113-118 as allowed by the<br/> Chemistry Department or CHM 114<br/> and 231 and 235;<br/> GLG 101 and 102, Introduction to<br/> Geology I and II and associated labs<br/> GLG 103 and 104;<br/> MIC 205, Microbiology or MIC 220,<br/> Biology of Microorganisms and<br/> MIC 206 Microbiology Laboratory<br/> MBB 245, Cellular and Molecular Biology<br/> and MBB 246 Laboratory<br/> PHY 121, Univ. Physics I: Mechanics<br/> PHY 131, Univ. Physics II: Electricity<br/> &amp; Magnetism. (and the associated<br/> laboratory courses, PHY 122 and PHY<br/> 132,)<br/> PHY 150, Physics I and PHY 151, Physics<br/> II<br/> PLB 200, Biology of Plants and PLB 201,<br/> Laboratory<br/> Subtotal: 14 to 17 semester hours</p> |
| <p>2. Core courses in Computational Mathematics:<br/> MAT 274, Elementary Differential Equations<br/> or MAT 275, Modern Differential<br/> Equations<br/> MAT 342, Linear Algebra or<br/> MAT 343, Modern Linear Algebra<br/> MAT 420, Scientific Computing<br/> MAT 421, Applied Computational Methods<br/> (MAT 275 and 343 are recommended)<br/> Subtotal: 12 semester hours</p> | <p>6. Internship, Research, or Advanced Science<br/> Requirement. One of the following<br/> courses:<br/> a) MAT 484, Internship<br/> b) MAT 493, Honors Thesis/Research<br/> c) MAT 494, Independent Study/Research<br/> d) One advanced course in science for which<br/> a one-year sequence in the same science<br/> is required.<br/> Subtotal: 3 semester hours</p>  |
| <p>3. Three advanced courses in Mathematics and<br/> Statistics:<br/> a) One of:<br/> MAT 362, 370, 371, 460<br/> b) Two of:<br/> MAT 351, 415, 416, 419, 423, 425, 447,<br/> 451, 452, 455, 461, 462, 475, 476,<br/> STP 420, 421, 425, 427, 429<br/> Subtotal: 9 semester hours</p>   |   |
| <p>4. Computing requirement:<br/> CSE 200, Concepts of Computer Science<br/> CSE 210, Data Structures &amp; Algorithms I<br/> CSE 240, Introduction to Programming<br/> Languages or CSE 310, Data Structures &amp;<br/> Algorithms II<br/> Subtotal: 9 semester hours</p>  |   |
| <p>5. Science requirement:<br/> Two one-year science and lab sequences from the<br/> following list:</p>  |   |

**Restrictions:**

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

