Mathematics-Computer Science Major Application

UCSD Student ID # Date

Last Name First Name MI

Email Phone Number

1) I am enrolled in the following UCSD College (check one):
   - Thurgood Marshall
   - Eleanor Roosevelt
   - John Muir
   - Earl Warren
   - Revelle
   - Sixth College

2) The quarter and year I entered UCSD was:
   Quarter (Fall, Winter, Spring or Summer): Year:

3) I entered UCSD as a (check one):
   - Transfer Student
   - First Year Student

4) The Academic Senate approved a minimum GPA requirement of 2.5 in the lower division mathematics courses required for the Math-Computer Science major. The 2.5 minimum GPA in the lower division math courses reflects minimal preparation for upper division courses required for the major. Therefore, please indicate the following, where applicable:

<table>
<thead>
<tr>
<th>UCSD Course</th>
<th>Grade (or AP Score)</th>
<th>Junior College (if transfer course)</th>
<th>Junior College Course</th>
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<tbody>
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<td>Math 20A</td>
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<td>Math 20B</td>
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<td>Math 21C</td>
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<td>Math 20F</td>
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For Mathematics Department Use Only:
Basis Date Approved Disapproved

- 1st YR FA02 and later
- Transfer FA03 and later
- 1st YR Prior FA02
- Transfer Prior FA03

For Mathematics Department Use Only:
Basis Date Approved Disapproved

Submit completed application to the Math Advising Office (AP&M 2313). Application deadline is before the instruction period ends in the spring term of applicant’s sophomore year. See reverse side for the requirements of the Math-CS major.
Mathematics-Computer Science Major
Application
Mathematics - Computer Science Major Requirements
Effective Fall 2001

Graduates of this program will be mathematically oriented computer scientists who have specialized in the mathematical aspects and foundations of Computer Science. Based upon past student performance, the Mathematics Department recommends that students who want to complete the Math-Computer Science major achieve at least a 2.5 GPA in all lower division mathematics courses.

Lower-Division Requirements
1. Math 20A-B Calculus for Science and Engineering
   Math 21C Calculus and Analytical Geometry
   Math 21D Introduction to Differential Equations
   Math 20E Vector Calculus
   Math 20F Linear Algebra
2. One of the following:
   CSE 11 Introduction to Computer Science: Java (Accelerated Pace)
   Or
   CSE 8A-B Introduction to Computer Science: Java
3. CSE 12 Data Structures and Object-Oriented Programming
4. CSE 30 Computer Organization and Systems Programming

Upper-Division Requirements
1. Math 109 Mathematical Reasoning
2. Math 103A-B Modern Applied Algebra (100A-B may be substituted)
3. Math 166 Theory of Computability (or CSE 105)
4. Math 176 Advanced Data Structures (or CSE 100)
5. Math 180A Introduction to Probability (Duplication of credit w/ Math 183)
7. Math 188 Design and Analysis of Algorithms (or CSE 101)
8. Any eight units from:
   Math 170A Numerical Linear Algebra
   Math 170B Numerical Analysis
   Math 170C Numerical Ordinary Differential Equations
   Math 172 Numerical Partial Differential Equations
   Math 173 Mathematical Software-Scientific Programming
   Math 174 Numerical Methods in Science and Engineering
   (Duplication of credit w/ Math 170A, Math 170B and/or Math 170C)
9. Any eight units from:
   Math 107A-B Computer Algebra
   Math 155A-B Computer Graphics
   Math 160A-B Elementary Math. Logic
   Math 166B Theory of Computability
   Math 168A-B Topics in Applied Math-Computer Science
   Math 184B Mathematical Foundations of Computer Science
   Math 187 Introduction to Cryptography
   CSE 120-121 Computer Operating Systems
   CSE 130 Programming Languages
   CSE 131A-B Compiler Construction
   CSE 140-140L Components and Design Techniques for Digital Systems
   CSE 141-141L Introduction to Computer Architecture
10. Any additional eight units in list 8 or list 9 or from:
    Math 102 Applied Linear Algebra
    Math 110 Introduction to Partial Differential Equations (PDE)
    Math 130A-B Ordinary Differential Equations (ODE)
    Math 131 Variational Methods in Optimization
    Math 132A-B Elements of PDE and Integral Equations
    Math 140A-B Foundations of Analysis
    Math 142A-B Advanced Calculus
    Math 171A-B Mathematical Programming
    Math 180 B-C Introduction to Probability
    Math 181A-B-C Introduction to Statistics

In order to graduate by the end of their senior year, students must complete Mathematics 103A, 103B, and 166 by the end of their junior year. Updated: 07/23/01

Revised: 10/22/01