

Department of Mathematics, University of California, San Diego

PRELIMINARY DEGREE CHECK

MAJOR in MATHEMATICS-COMPUTER SCIENCE (MA30)

Name: _____

PID: _____

Admit quarter: _____

Graduating Quarter: _____

Major GPA: _____

Lower-Division Requirements

Mathematics (24 units total):

- 1. Math 20A Calc for Sci & Eng
- 2. Math 20B Calc for Sci & Eng
- 3. Math 20C/31BH Calc & Analyt. Geom
- 4. Math 20D Intro to Diff. Eqns
- 5. Math 20E/31CH Vector Calculus
- 6. Math 20F/31AH Linear Algebra

Computer Science:

- 1. CSE 8A-AL-B Intro to Comp Sci: Java
- OR
- CSE 11 Intro Java (Accelerated Pace)
- 2. CSE 12 Data Struct. & Object-oriented Prog
- 3. CSE 30 Comp Organization & Systems

The Mathematics Department requires that students complete the required lower division mathematics courses with a minimum GPA of 2.5 before acceptance into the major will be granted. **Note: Some CSE courses may have prerequisites not listed here.

Upper-Division Requirements (14 courses)

- 1. Math 109 Mathematical Reasoning
- 2. Math 103A-B Modern Algebra (or Math 100A-B)
(Complete by end of junior year)
- 3. Math 166 Theory of Computability (or CSE 105)
- 4. Math 176 Advanced Data Structures (or CSE 100)
- 5. Math 180A Intro to Probability OR Math 183 Stat Methods
- 6. Math 184A Combinatorics
- 7. Math 188 Design & Analysis of Algorithms (or CSE 101)

9. Any eight units from List B:

- Math 152 Applicable Math & Computing
- Math 154 Discrete Math & Graph Theory
- Math 155A (or CSE 167)-B Computer Graphics
- Math 168A Topics in App Math-CS
- Math 187 Intro to Cryptography
- CSE 120-121 Comp Operating Systems
- CSE 130 Programming Languages
- CSE 131A-B Compiler Construction
- CSE 140-140L Comp & Design Techniques for Digital Systems
- CSE 141-141L Intro to Comp Architecture

8. Any eight units from List A:

- Math 170A Intro to Num Analysis: Linear Algebra
- Math 170B Intro to Num Analysis: Approx & Nonlinear Eqns
- Math 170C Intro to Num Analysis: Ordinary Diff Eqns
- Math 175 Numerical Methods in Partial Diff Eqns
- Math 179 Projects in Comp & App Math
- Math 174 Numerical Methods (Duplication of credit with Math 170ABC)

10. Any additional 8 units from List A or B or from the following mathematics upper-division courses:

102 Applied Linear Algebra, 110A Intro to Partial Diff Eqns, 110B Elements of PDE & Integral Equations, 111A-B Math Modeling, 120A-B Complex Analysis, 130A-B Ordinary Diff Eqns, 140A-B Foundations of Analysis, 142A-B Advanced Calculus, 150A-B Diff Geom/Calc on Manifolds, 171A-B Intro to Num Optimization, 181A-B-C Intro to Stats, 185 Math Foundations Comp Sci.

Course Selections

- 1. Math 109 (4 units)
- 2. Math _____ (4 units)
- Math _____ (4 units)
- 3. Math/CSE 166/105 (4 units)
- 4. Math/CSE 176/100 (4 units)
- 5. Math _____ (4 units)
- 6. Math 184A (4 units)
- 7. Math/CSE 188/101 (4 units)
- 8. Math _____ (4 units)
- Math _____ (4 units)
- 9. _____ (4 units)
- _____ (4 units)
- 10. _____ (4 units)
- _____ (4units)

Mathematics Department Evaluation

Comments: _____

Advisor: _____

Date: _____