MATHEMATICS B.A. - Computational Mathematics 2020/21 (BF 7/2/20)

Name: _____ Date: _____

(Quarter offered: F=Fall, W=Winter, S=Spring, *= Not offered thi: ID#: _____

NOTE: Courses appearing in more than one category can fulfill only one requirement.

INTRODUCTORY REQUIREMENTS (6 otal)

Calculus: MATH 19A (FWS) ___ + 19B or Math 20A (F) ___ + 20B (W) ___

Linear Algebra: MATH 21 (FWS) ___

Vector Calculus: MATH 23A (FWS) ___ + MATH 23B (FWS) ___

Intro to Proof & Problem Solving MATH 100 (FWS) ____

ADVANCED REQUIREMENTS (9 total)

Math: MATH 24 Differential Equations (FW) ___

MATH 110 Introduction to Number Theory (WS) ___

Algebra: ONE of the following.

MATH 111A Algebra (FW) ___

MATH 111T Algebra (S) ___

Math 117 Advanced Linear Algebra (FS) ___

Differential Equations: ONE of the following.

MATH 106 Systems of Ordinary Differential Equations (W)___

MATH 107 Partial Differential Equations (S) ___

Analysis: ONE of the following.

MATH 103A Complex Analysis (WS) ___

MATH 105A Real Analysis (FW) ___

Computational: ONE of the following.

MATH 145/L Introduction to Chaos & Lab (*) ___

MATH 148 Numberical Analysis (S) ___

AM 114 Introduction to Dynamical Systems (F)___

AM 147 Computatoinal Methods and Applications (W)___

Electives: TWO of the following.

Any AM or STAT course numbered 100 and above
BME 110 Computational Biology Tools
CSE 101 Algorithms & Abstract Data Types
CSE 102 Introduction to Analysis of Algorithms
CSE 103 Computational Models
CSE 104 Computability & Computational Complexity
CSE 106 Applied Graph Theory & Algorithms
CSE 107 Probability and Statistics for Engineers
CSE 110A Fundamental of Compiler Design I
CSE 111 Advanced Programming
CSE 112 Comparative Programming Languages
CSE 142 Machine Learning & Data Mining
EART/OCEA 172 Geophysical Fluid Dynamics
ECE 103 Signals & Systems
ECE 130 Introduction to Optoelectronics & Photonics
ECE 135 Electromagnetic Fields & Waves
ECE 141 Feedback Control Systems
ECE 151 Communications Systems
ECE 153 Digital Signal Processing
ECON 113 Introduction to Statistics & Econometrics
Math 115 Graph Theory
Math 116 Combinatorics
Math 120 Coding Theory
Math 134 Cryptography
Math 145 Introduction to Chaos
Math 148 Numberical Analysis
Math 152 Programming for Mathematics
Math 160 Mathematical Logic
PHYS 107 Fluid Dynamics
PHYS 115 Computational Physics

COMPREHENSIVE REQUIREMENT

MATH 194 Senior Seminar (WS) ___ **OR** MATH 195 Senior Thesis (FWS) ___

Disciplinary Communication Requirement (DC): Students satisfy this requirement by completing courses MATH 100 and either MATH 194 or MATH 195. The DC course requirement must be taken at UCSC.