Requirements for the new B.S. in Mathematics

Core courses (16/19):
MATH 1550/1551 Differential Calc (3/2)
MATH 1552 Integral Calculus (4)
MATH 2551/2561 Multivariable Calculus (4)
MATH 2552/2562 Differential Equations (4)
Plus one course from the following list:
MATH 1553 Introduction to Linear Algebra (2)
MATH 1554 Linear Algebra (4)
MATH 1564 Linear Algebra with Abstract Vector Spaces (4)

Bridging courses (12):
__MATH 2106 Foundations Of Mathematical Proof (3)
__MATH 3012 Applied Combinatorics (3)
__MATH 3235 Probability Theory (3)
__MATH 3406 A Second Course in Linear Algebra (3)

Upper level foundation courses (21):
__MATH 4107 Abstract Algebra I (3)
__MATH 4317 Real Analysis I (3)
__MATH 4320 Complex Analysis (3)

Plus **four** courses from the following list:
__MATH 4022 Intro to Graph Theory (3)
__MATH 4032 Combinatorial Analysis (3)
__MATH 4108 Abstract Algebra II (3)
__MATH 4150 Intro to Number Theory (3)
__MATH 4221 Stochastic Processes I (3)
__MATH 4261 Mathematical Statistics I (3)
__MATH 4318 Real Analysis II (3)
__MATH 4347 Partial Differential Equations I (3)
__MATH 4431 Introduction to Topology (3)
__MATH 4432 Introduction to Algebraic Topology (3)
__MATH 4441 Differential Geometry (3)
__MATH 4541 Dynamics and Bifurcations I (3)
__MATH 4640 Numerical Analysis I (3)

Upper level math electives (9):
Nine credit hours chosen from the above list or the list below (must be different from the courses used to satisfy the above requirements):
__MATH 4080/4090 Senior Project (2)
__MATH 4222 Stochastic Processes II (3)
__MATH 4255 Monte Carlo Techniques (3)
__MATH 4262 Mathematical Statistics II (3)
__MATH 4280 Introduction to Information Theory (3)
__MATH 4348 Partial Differential Equations II (3)
__MATH 4542 Dynamics and Bifurcations II (3)
__MATH 4580 Linear Programming (3)
__MATH 4581 Classical Mathematical Methods in Engineering (3)
__MATH 4641 Numerical Analysis II (3)
__MATH 4699 Undergraduate Research (1/6)
__MATH 4755 Mathematical Biology (3)
__MATH 4777 Scientific Computing (3)
__MATH 4782 Quantum Information and Quantum Computing (3)
__MATH 4801 Undergraduate Seminar (1)
__MATH 4802 Mathematical Problem Solving (2)
__CS 3510/3511 Design and Analysis of Algorithms I (3)
__CS 4510 Automata and Complexity (3)
__CS 4540 Advanced Algorithms (3)
__CS 4641 Machine Learning (3)
__CX 4140 Computational Modeling Algorithms (3)
__CX 4240 Computational Data Analysis (3)
__ISYE 3133/3833 Engineering Optimization (3)
__ISyE 4133 Advanced Optimization (3)

Supporting courses (18):
__CS 1301 Intro to Computing (3)
__CS 1331 Intro to Object Oriented Programming (3)
__Lab Sci (BIOL, CHEM, EAS) (4)
__PHYS 2211/2231 Physics I (4)
__PHYS 2212/2232 Physics II (4)

Sci/Eng Electives (9):
Three upper level courses from an approved school, at least two of which must be from the same school. (Approved schools: Biol, Chem, EAS, Phys, Psyc, Eng Schools, CS, Econ)

Humanities (12):
__ENGL 1101 (3)
__ENGL 1102 (3)
Humanities/Fine Arts Elective (6): Approved HUM courses, such as Literature,
Phil, Foreign Language, etc.

Social Sciences (12):
__One of HIST 2111, HIST 2112, POL 1101,INTA 1200, PUBP 3000 (3)
Social Science Electives (9): approved SS courses, such as Economics,
Psychology, History, etc.

Wellness (2): APPS 1040 or 1050
Free Electives (11)

Total: 122 hours