B.S. Mathematics - Option A ("Pure Math")

CS 115
Computer
Programming

MA 113/137
Calculus I

MA/ECO 327
Game Theory

MA 330
History of Math

MA 114/138
Calculus II

MA/CS 321
Numerical Methods

MA 214
Calculus IV

MA 261
Number Theory

MA 322
Matrix Algebra

MA 213
Calculus III

MA 341
Geometry

MA 433
Complex Variables

MA/CS 415
Combinatorics &
Graph Theory

MA 351
Topology I

MA 361
Abstract Algebra I

MA 471
Analysis I

MA 432
Methods of Applied
Mathematics I

MA/CS 416
Optimization

MA/STA 320
Probability

MA/CS 340
Applicable Algebra

MA 352
Topology II

MA 362
Abstract Alg II

MA 472
Analysis II

MA 481
Differential
Equations

MA/STA 417*
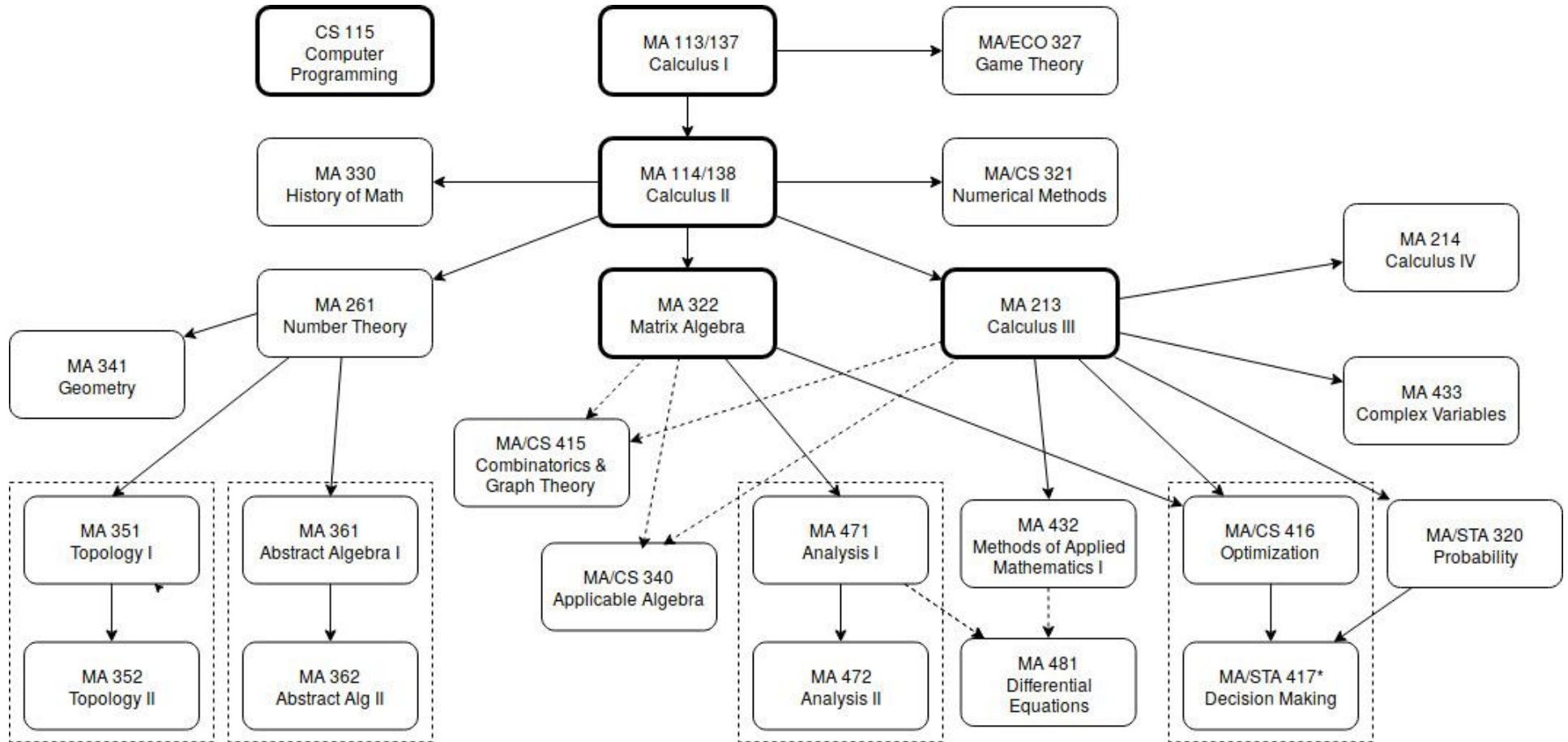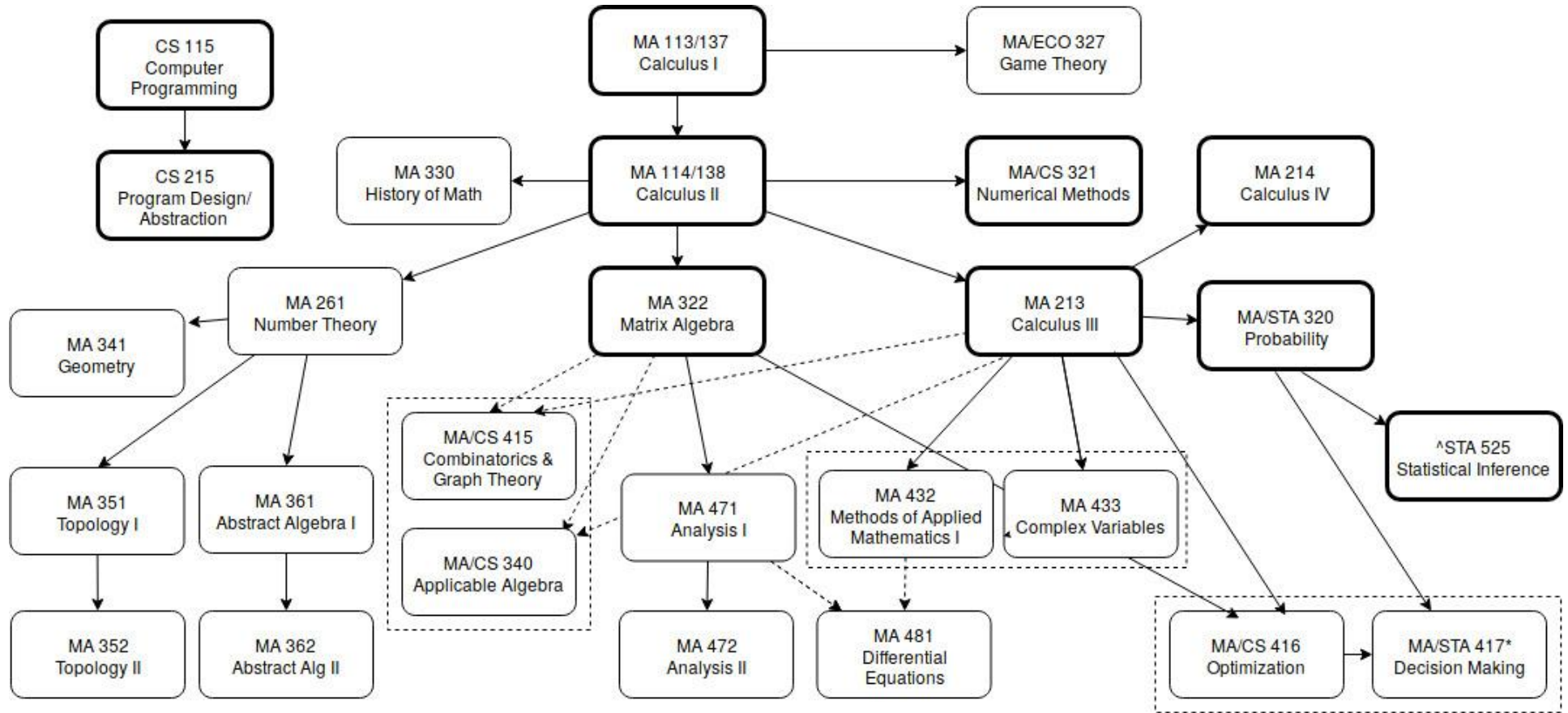Decision Making

Bold boxes are required for all option A students and students are advised to do them as early as possible. Dashed arrows indicate either course satisfies the pre-req. Dashed boxes indicate sequence classes.
* Possible pre-req change soon

Requirements:
- ☐ MA 113 Calc I   ☐ MA 114 Calc II   ☐ MA 213 Calc III   ☐ MA 322 Matrix Alg   ☐ CS 115 Programming
- ☐ MA 214 Calc IV or MA 261 Number Theory   ☐ Upper-level sequence (351/352, 361/362, 471/472, or 416/417)
- ☐ Additional 12 hrs of 300+ MA courses   ☐ 14 hrs outside department (refer to official degree sheet for details)
- ☐ MA 391 (prereqs, one from each: 213 | 214 or 261 | 322 | 321, 351, 361, or 471 | 30+ completed credit hrs)

B.S. Mathematics - Option B ("Applied Math")

Bold boxes are required for all option B students. Dashed arrows indicate that either course satisfies the pre-req. Be aware that a few arrows go behind other classes. Dashed boxes indicate sequence classes.
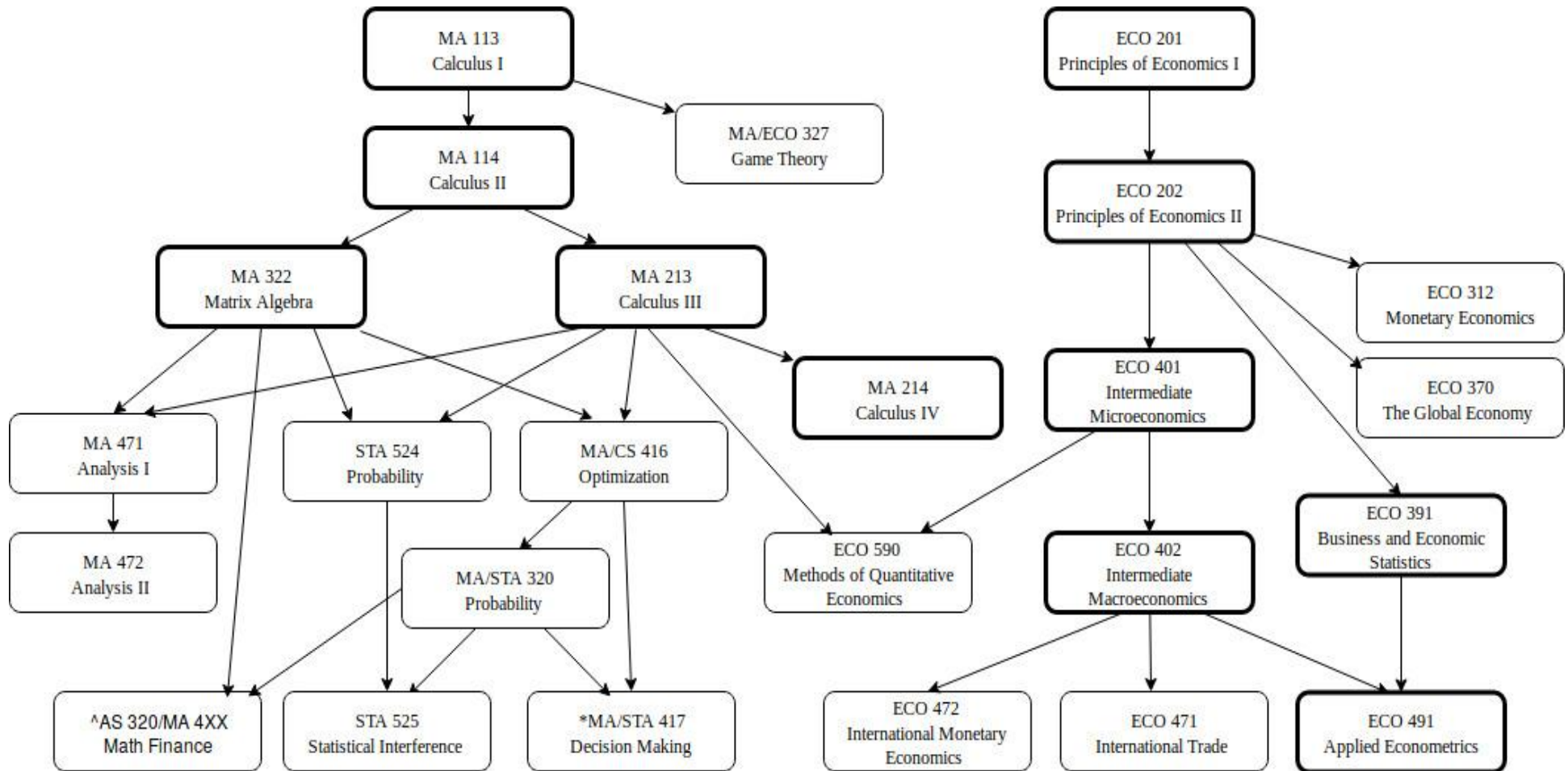* Possible pre-req changes soon   ^ STA 525 is the standard replacement for STA 321, which is not offered

Requirements:
☐ MA 113/114/213/214 Calc I-IV   ☐ MA 320 Probability   ☐ MA 321 Numerical Methods   ☐ MA 322 Matrix Alg
☐ STA 525 Stats   ☐ CS 115/215 Programming   ☐ Upper-level sequence (415/340, 416/417, or 432/433)
☐ Additional 6 hrs of 300+ MA courses   ☐ 9 hrs in supporting program (refer to official degree sheet for details)
☐ MA 391 (prereqs, one from each: 213 | 214 or 261 | 322 | 321, 351, 361, or 471 | 30+ completed credit hrs)

B.S. Math Econ

Bold boxes are required for all math econ students. Note, there exists more math and econ classes and this chart only represents popular classes for math-econ students.
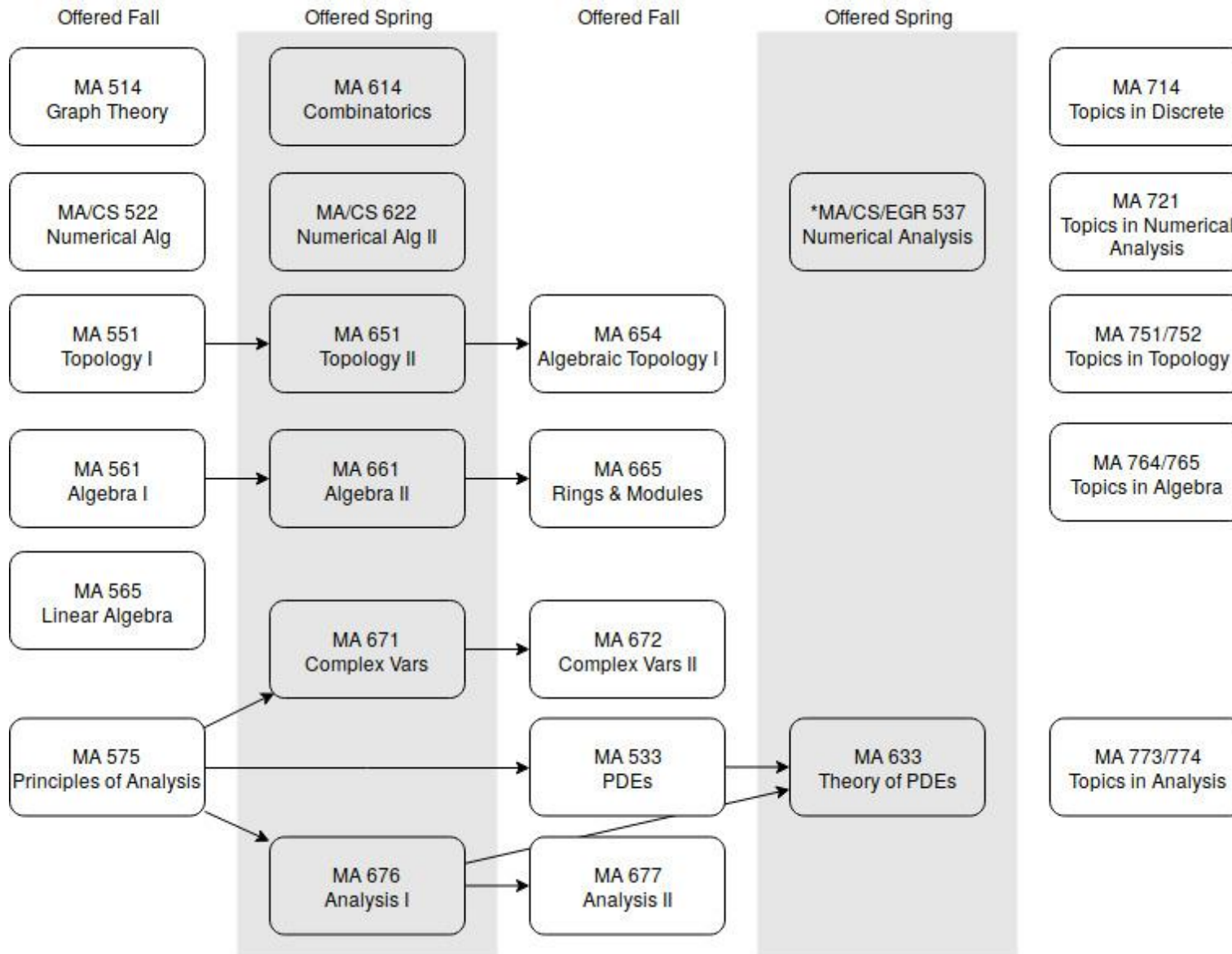
* Possible prereq changes soon   ^ Math Finance is a new class, MA course number pending

Requirements:
- ☐ MA 113-214 Calc I-IV   ☐ MA 320 or STA 524 Probability   ☐ MA 322 Matrix Alg
- ☐ ECO 201/202 Principles of Econ   ☐ ECO 401/402 Int. Econ Theory   ☐ ECO 391/491 Econometrics
- ☐ Upper-level sequence (416/417/STA 525 or 471/472/417)   ☐ One 300+ level ECO course and one 400+ level ECO course

UK Graduate Classes

MA 514
Graph Theory

MA 614
Combinatorics

MA 714
Topics in Discrete

MA/CS 522
Numerical Alg

MA/CS 622
Numerical Alg II

*MA/CS/EGR 537
Numerical Analysis

MA 721
Topics in Numerical Analysis

MA 551
Topology I → **MA 651**
Topology II → **MA 654**
Algebraic Topology I

MA 751/752
Topics in Topology

MA 561
Algebra I → **MA 661**
Algebra II → **MA 665**
Rings & Modules

MA 764/765
Topics in Algebra

MA 565
Linear Algebra

MA 671
Complex Vars → **MA 672**
Complex Vars II

MA 575
Principles of Analysis → **MA 533**
PDEs → **MA 633**
Theory of PDEs

MA 773/774
Topics in Analysis

MA 676
Analysis I → **MA 677**
Analysis II

This represents primarily pure math courses. There are some MA/PHY courses regularly offered but not listed.
Some pre-reqs are also not shown.

Topics courses are offered on a somewhat random basis and are subtitled.

* 537 is offered both semesters

Undergrads are advised to not take any graduate courses until they have successfully completed all basic major courses and at least one semester of a sequence. Speaking to the professor is also a must.
Grad classes can be beneficial for upperclassmen but are not necessary, even for those intending on math grad school. Only take them if you really want to do it and feel prepared.