A course plan for a BCB-MA double major

1. WPI Degree requirements (totally 12/3 units)

   2/3 units of Social Sciences
   6/3 units of Humanities and Arts
   3/3 units of IQP
   1/3 unit of Physical Education (4 PE classes)

2. BCB distribution requirements (totally 31/3 units + 1/3 extra unit in joint MQP)

2.1 Non-MA courses for the BCB major (totally 17/3 units).

   Notes: The detailed notes for these courses are listed in the program description of the BCB major.

   4/3 units of Computer Science
   5/3 units of Biology
   4/3 units of Chemistry
   3/3 units of Bioinformatics and Computational Biology
   1/3 unit of Social implications

2.2 MQP (BCB-MA joint) 4/3 units

2.3 Mathematics courses (totally 5/3 units)

   3/3 units of Mathematics in calculus and statistics:
   o MA1021 (Calculus I)
   o MA1022 (Calculus II)
   o MA2611 (Applied Statistics I)
   2/3 units of Mathematics in linear algebra and statistics:
   o MA1023 (Calculus III)
   o MA2612 (Applied Statistics II)

2.4 Advanced disciplinary courses in Math (totally 6/3 units)

   o MA2631 Probability (I don’t think MA1024 is necessary, even if it is listed as recommended)
   o MA2431 Mathematical Modeling with Ordinary Differential Equations (recommend MA1024, MA2051, and MA2071)
   o MA 3627 Applied Statistics III
   o MA 4631 Probability and Mathematical Statistics I (1.5/3 units)
   o MA 4632 Probability and Mathematical Statistics (1.5/3 units)

3. Based on a BCB major satisfying the above requirements, extra 8/3 units of MA courses lead to the 2nd major in Mathematical Sciences.
(Note: These include the recommended courses for MA2431 listed above, which is not a must-have if the 2nd major in MA is not of interest.)

2/3 units of must-include (or their equivalents) + 3/3 units recommended
  o MA3831 (Advanced Calculus I), which has recommended 1/3 unit of
    ▪ MA2071 (Matrices and Linear Algebra I)
    ▪ MA2051 (Ordinary Differential Equations)
    ▪ MA1024 (Calculus IV)
  o MA3832 (Advanced Calculus II)

1/3 unit: At least one of
  o MA3257/CS4032 (Numerical Methods for Linear and Nonlinear Systems), or
    MA3457/CS4032 (Numerical Methods for Calculus and Differential Equations), or equivalent

1/3 unit: At least one of
  o MA3823 (Group Theory), or MA3825 (Rings and Fields), or equivalent

1/3 unit: At least one of
  o MA2073 (Matrices and Linear Algebra II), or MA2271 (Graph Theory), or MA2273 (Combinatorics)

4. Math major distribution requirements are

   (A) 21/3 units of Math (including MQP, with a list of must included courses mostly described in above Part 3) and
   (B) 9/3 units of sciences, computer sciences, etc. (with conditions of types of courses).

Assume a MA major satisfies above requirement (A) by courses in sessions 2.2, 2.3, 2.4 and 3 (totally 23/3 units), the difference between above requirement (B) and the courses in session 2.1 indicates that a MA major also needs extra 8/3 units to get the 2nd major in BCB.