**Mathematics Major Requirements: Advisement Form**  
**Bachelor of Science Degree**

Name:  
UMBC username or ID: 

**NOTE:** A grade of C or better is required in courses to fulfill major requirements.

### I Core Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester/Year</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 151</td>
<td>Calculus and Analytic Geometry I</td>
<td></td>
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<tr>
<td>MATH 152</td>
<td>Calculus and Analytic Geometry II</td>
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<tr>
<td>MATH 221</td>
<td>Introduction to Linear Algebra</td>
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<tr>
<td>MATH 225</td>
<td>Introduction to Differential Equations</td>
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<tr>
<td>MATH 251</td>
<td>Multivariable Calculus</td>
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<tr>
<td>MATH 301</td>
<td>Introduction to Mathematical Analysis I</td>
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<td></td>
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<tr>
<td>MATH 302</td>
<td>Introduction to Mathematical Analysis II</td>
<td></td>
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<tr>
<td>MATH 401</td>
<td>Mathematics Analysis</td>
<td></td>
<td></td>
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<tr>
<td>CMSC 201</td>
<td>Computer Science I</td>
<td></td>
<td></td>
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<tr>
<td>PHYS 121</td>
<td>Introductory Physics I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 122</td>
<td>Introductory Physics II</td>
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</tbody>
</table>

### II Upper Level Mathematics/Statistics Electives

Courses must be numbered higher than MATH 302. MATH 380, MATH 432, STAT 350 and STAT 351 are not counted as upper level electives for the major. At least THREE of these courses must be at the 400 level.

<table>
<thead>
<tr>
<th>Semester/Year</th>
<th>Grade</th>
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</table>

**Note:** For ONE of the mathematical electives, a major may bundle together three or more credits from courses carrying one or two credits. These include: MATH 426, 427, 479, 480, 490, 496, 499 and STAT 432, 470, 490, 496 and 499.

### III Supplementary Requirements

Students must take TWO courses from the following list:

- BIOL 463 Theoretical and Quantitative Biology
- CHEM 401 Chemical and Statistical Thermodynamics
- CHEM 415 Statistical Mechanics and Theory of Rate Processes
CMPE 320 Probability Statistics and Random Processes
CMPE 323 Signal and System Theory

CMSC 203 Discrete Structures *(Must be taken before MATH 301 to be accepted)*
CMSC 341 Data Structures
CMSC 441 Algorithms
CMSC 442 Information and Coding Theory
CMSC 443 Cryptography
CMSC 451 Automata Theory and Formal Languages
CMSC 452 Logic for Computer Science
CMSC 453 Applied Combinatorics and Graph Theory

ECON 311 Intermediate Economic Analysis
ECON 374 Fundamentals of Financial Management
ECON 417 The Economics of Strategic Interaction
ECON 421 Introduction to Econometrics

EDUC 320 Teaching Mathematics in the Elementary School
EDUC 426 Teaching Mathematics in the Secondary School

ENCH 300 Chemical Processes and Thermodynamics
ENME 217 Engineering Thermodynamics
ENME 315 Intermediate Thermodynamics
ENME 342 Fluid Mechanics
ENME 410 Operations Research

MATH 432 History of Mathematics

PHIL 248 Introduction to Scientific Reasoning
PHIL 346 Deductive Systems
PHIL 372 Philosophy of Science

PHYS 224 Introductory Physics III
PHYS 303 Thermal and Statistical Physics
PHYS 321 Intermediate Mechanics
PHYS 407 Electromagnetic Theory
PHYS 424 Introduction to Quantum Mechanics
PHYS 440 Computations Physics