# Bachelor of Science in Applied Mathematics

## Wright State Core – 42 hours

### Element 1 Communications
- ENG 1100 Academic Writing and Reading
- ENG 2100 Research and Argument

### Element 2 Mathematics
- MTH 2300 Calculus I

### Element 3 Global Traditions
Choose one interdisciplinary course:
- AFS 2000 (IW, MC)  
  CST 2430 (IW, MC)  
  RST 2620 (IW, MC)
- ATH 2500  
  CST 2510 (IW, MC)  
  MTH 2710 (IW, MC)
- CS 1000  
  EC 2100  
  RST 2810 (IW, MC)
- CST 2210 (IW, MC)  
  EC 2500 (IW, MC)  
  RST 2910 (IW, MC)
- CST 2310 (IW, MC)  
  EC 2900 (IW, MC)  
  RST 2920 (IW, MC)
- CST 2320 (IW, MC)  
  ED 2100 (MC)  
  URS 2000 (IW, MC)
- CST 2410 (MC)  
  ML 2030
- CST 2420 (IW, MC)  
  RST 2610 (IW, MC)

Choose one History course:
- CLS 1500
- HST 1100
- HST 1200

### Element 4 Arts/Humanities
Choose one course:
- ART 2140
- ENG 2050 (IW, MC)
- PHL 2040 (IW)
- CLS 2040 (IW)
- CST 2310 (IW)
- MUS 1210
- PHL 2100
- CST 2320 (IW)
- ENG 2070 (IW)
- MUS 2900 (IW, MC)

### Element 5 Social Science
Choose two (2) courses from different disciplines
- ATH 2200
- EC 2500 (IW, MC)
- SOC 2000 (IW)
- EC 2000 (IW)
- EC 2900 (IW, MC)
- SW 2720 (IW, MC)
- EC 2040
- FIN 2050
- UH 2020 (IW)
- EC 2050
- PLS 2000
- WMS 2000 (IW, MC)
- EC 2100
- PSY 1010

### Element 6 Natural Science
- PHY 2400/2400L
- PHY 2410/2410L

### Additional Core Courses
- MTH 2310 Calculus II

One additional approved Wright State Core course from any of the Elements

### Multicultural Competence
- Two Multicultural Competence (MC) courses from the Wright State Core, Study Abroad, or Service Learning courses

### Writing Across the Curriculum
- Two Integrated Writing (IW) courses from the Wright State Core.

## Departmental Requirements – 40 hours

### Required Core Courses (16 - 17 hours)
- MTH 2320 Calculus III (4 hours)
- MTH 2330 Differential Equations (3 hours) OR
- MTH 2350 Differential Equations w/ Matrix Algebra (4 hours)
- MTH 2530 Elementary Linear Algebra (3 hours)
- MTH 2800 Writing Mathematical Proofs (3 hours)
- MTH 4310 Real Variables I (3 hours)

### Electives (24 hours)
- MTH 4810 Applied Mathematics I (3 hours)
- Three of the following courses:
  - MTH 3060 Mathematical Modeling (3 hours)
  - MTH 3260 Numerical Methods (3 hours)
  - MTH 3320 Complex Variables (3 hours)
  - MTH 3330 Partial Differential Equations (3 hours)
  - STT 3600 Applied Statistics I (3 hours)

Four (4) additional department approved electives, including at least one (1) at the 4000-level.

### Related Course Requirements – 16 hours
- CS 1160 or CS 1180 or CEG 2170 (4 hours)
- PHY 3710 or ME 2210 (3 hours)
- Nine (9) hours of advanced technical electives

### General Electives – 24 hours
Choose from the Wright State University Undergraduate Catalog.

Foreign language study is recommended.

### Department Approved Elective Courses
- MTH 4070 Optimization Techniques (3 hours)
- MTH 4150 Introduction to Scientific Computation (3 hours)
- MTH 4240 Coding Theory (3 hours)
- MTH 4260 Matrix Computations (3 hours)
- MTH 4290 Cryptography and Data Security (3 hours)
- MTH 4320 Real Variables II (3 hours)
- MTH 4510 Modern Algebra I (3 hours)
- MTH 4520 Modern Algebra II (3 hours)
- MTH 4550 Advanced Linear Algebra (3 hours)
- MTH 4570 Combinatorics and Graph Theory (4 hours)
- MTH 4710 Geometry (3 hours)
- MTH 4810 Applied Mathematics I (3 hours)
- MTH 4820 Applied Mathematics II (3 hours)
- MTH 4920 Undergraduate Mathematics Seminar (3 hours)
- STT 3610 Applied Statistics II (3 hours)
- STT 4610 Theory of Statistics I (4 hours)
- STT 4620 Theory of Statistics II (4 hours)
- STT 4660 Statistical Methods I (4 hours)
- STT 4670 Statistical Methods II (4 hours)

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Department of Mathematics and Statistics