

## Roadmap: Applied Mathematics - Applied Mathematics - Bachelor of Science

AS-BS-AMTH-AMTH
College of Arts and Sciences
Department of Mathematical Science

Catalog Year: 2015-2016

This roadmap is a recommended semester-by-semester plan of study for this major. However, courses and milestones designed as critical (!) must be completed in the semester listed to ensure a timely graduation.

| Critical      | Course Subject and Title   | Credit<br>Hours | Min.<br>Grade  | Major<br>GPA | Attribute | Notes |
|---------------|--|-----------------|----------------|--------------|-----------|-------|
|               | r One [15 Credits]   |                 |                |              |           |       |
| !             | MATH 12002 Analytic Geometry and Calculus I  | 5               | С              |              | KMC       |       |
|               | US 10097 Destination Kent State: First Year Experience <sup>1</sup>  | 1               |                |              |           |       |
|               | Kent Core Requirement  | 3               |                |              |           |       |
|               | Kent Core Requirement  | 3               |                |              |           |       |
|               | Kent Core Requirement  | 3               |                |              |           |       |
| Semeste       | r Two [15 Credits]   |                 |                |              |           |       |
| !             | MATH 12003 Analytic Geometry and Calculus II   | 5               | С              |              |           |       |
|               | CS 13001 Computer Science I-Programming and Problem Solving  |                 |                |              |           |       |
|               | or   | 4               | _              |              |           |       |
|               | CS 13011 Computer Science IA-Procedural Programming (2) and CS 13012 Computer Science IB-Object Oriented Programming (2) |                 | C              |              |           |       |
|               | Kent Core Requirement  | 3               | C              |              |           |       |
|               | Kent Core Requirement  | 3               |                |              |           |       |
| Samasta       | r Three [16 Credits]   | J               |                |              |           |       |
| !<br>!        | MATH 22005 Analytic Geometry and Calculus III  | 4               | С              |              |           |       |
| •             | PHY 23101 General University Physics I   | 5               | -              |              | KBS       |       |
|               | Foreign Language <sup>2</sup>  | 4 - 5           |                | -            | KDO       |       |
|               | Kent Core Requirement  | 3               |                |              |           |       |
| `amaata       | r Four [15 Credits]  | 3               |                |              |           |       |
|               |  | 2               | •              | _            |           |       |
| !             | MATH 21001 Linear Algebra With Applications  | 3               | С              |              | KDO       |       |
|               | PHY 23102 General University Physics II  | 5               |                |              | KBS       |       |
|               | Foreign Language <sup>2</sup>  | 4 - 5           |                |              |           |       |
|               | Kent Core Requirement  | 3               |                |              |           |       |
|               | r Five [15 Credits]  |                 | •              |              |           |       |
| !             | MATH 32044 Introduction to Ordinary Differential Equations   | 3               | С              |              |           |       |
| !             | MATH 42031 Mathematical Models and Dynamical Systems<br>or MATH 42201 Introduction to Numerical Computing I              | 3               | С              |              |           |       |
|               | MATH 42041 Advanced Calculus   |                 |                |              |           |       |
| !             | or MATH 42048 Introduction to Complex Variables  | 3               |                |              |           |       |
|               | Kent Core Requirement  | 3               |                |              |           |       |
|               | Kent Core Requirement  | 3               |                |              |           |       |
| emeste        | r Six [15 Credits]   |                 |                |              |           |       |
| !             | MATH 42039 Modeling Projects   | 3               | C <sup>3</sup> |              | WIC/ELR   |       |
| •             | or MATH 42202 Introduction to Numerical Computing II   | J               |                |              |           |       |
| !             | MATH 42045 Introduction to Partial Differential Equations  | 3               |                |              |           |       |
|               | Allied Area Electives <sup>4</sup>   | 3               |                |              |           |       |
|               | General Electives <sup>5</sup>   | 6               |                |              |           |       |
| emeste        | r Seven [15 Credits]   |                 |                |              |           |       |
| !             | MATH 40011 Introduction to Probability Theory and Applications   | 3               |                |              |           |       |
| !             | MATH 42031 Mathematical Models and Dynamical Systems   | 3               | С              |              |           |       |
|               | or MATH 42201 Introduction to Numerical Computing I  | _               | _              | _            |           |       |
| !             | MATH 42041 Advanced Calculus or MATH 42048 Introduction to Complex Variables   | 3               |                | -            |           |       |
|               | General Electives <sup>5</sup>   | 6               |                |              |           |       |
| Semeste       | r Eight [14 Credits]   |                 |                |              |           |       |
| !<br>!        | MATH 40012 Introduction to Statistical Concepts  | 3               |                |              |           |       |
| <u>:</u><br>! | MATH 40012 Introduction to Statistical Concepts  MATH 41021 Theory of Matrices   | 3               |                |              |           |       |
|               | MATH 41021 Theory of Matrices  MATH 42039 Modeling Projects <sup>3</sup>   |                 | C 3            |              | WIC/ELR   |       |
| !             | or MATH 42202 Introduction to Numerical Computing II   | 3               |                |              |           |       |
|               | Allied Area Electives <sup>4</sup>   | 3               |                |              |           |       |
|               | General Electives <sup>5</sup>   | 2               |                |              |           |       |
|               |  |                 | 1              | 1            |           |       |

## **Graduation Requirements Summary**

| Minimum Total Hours  | Minimum Upper-Division Hours | Minimum Kent Core Hours  | Minimum   |             |
|----------------------|------------------------------|--------------------------|-----------|-------------|
| Millimum Total Hours | 30000 - 40000 level course   | Millimum Rent Core Hours | Major GPA | Overall GPA |
| 120                  | 42                           | 36                       | 2.000     | 2.000       |



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- 1. US 10097 is not required of transfer students with 25 credits (excluding College Credit Plus and dual-enrollment) or students age 21+ at time of admission.
- 2. Fulfills College General Requirement
- 3. A minimum C (2.000) grade must be earned in MATH 42039 to fulfill the writing-intensive requirement.
- 4. Allied Area Electives (6 credits)

| Choose from the following:                                     |   |  |  |  |  |  |  |
|--|---|--|--|--|--|--|--|
| BSCI 3/4xxxx Biological Science upper-division courses (1 - 6) | CHEM 3/4xxxx Chemistry upper-division courses (1 - 6)   |  |  |  |  |  |  |
| CS 3/4xxxx Computer Science upper-division courses (1 - 6)     | MATH 3/4xxxx Mathematics upper-division courses (1 - 6) |  |  |  |  |  |  |
| PHY 3/4xxxx Physics upper-division courses (1 - 6)             |   |  |  |  |  |  |  |

5. Minimum 3 upper-division credit hours. Credits required depend on meeting minimum 120 credit hours and minimum 42 upper-division credit hours.

University Requirements: Bachelor's degree-seeking students must meet Kent Core (general education requirements), diversity, writing-intensive and experiential learning requirements. For more information about these requirements, please read the following sections in the University Catalog: Kent Core – <a href="https://www.kent.edu/catalog/kent-core">www.kent.edu/catalog/kent-core</a>; Diversity Course Requirement – <a href="https://www.kent.edu/catalog/diversity">www.kent.edu/catalog/kent-core</a>; Experiential Learning Requirement – <a href="https://www.kent.edu/catalog/elr.">www.kent.edu/catalog/wic</a>; Experiential Learning Requirement – <a href="https://www.kent.edu/catalog/elr.">www.kent.edu/catalog/elr.</a>

Attribute Legend: DD Diversity–Domestic; DG Diversity–Global; ELR Experiential Learning; KAD Kent Core Additional; KBS Kent Core Basic Sciences; KCM Kent Core Composition; KFA Kent Core Fine Arts: KHU Kent Core Humanities; KMC Kent Core Mathematics and Critical Reasoning; KSS Kent Core Social Sciences; WIC Writing Intensive