Applied mathematicians use theories and techniques, such as mathematical modeling and computational methods, to formulate and solve practical problems in business, government, engineering, physics and the social sciences. For example, they may analyze the most efficient way to schedule airline routes between cities, the effects and safety of new drugs, the aerodynamic characteristics of an experimental automobile, or the cost-effectiveness of alternative manufacturing processes.

Applied mathematics majors at Pitt-Bradford take courses in Computer Science, Linear Algebra, Calculus, Differential Equations, Statistics and Mathematical Modeling. Applied mathematics majors use math to understand real-world problems like population growth and AIDS-related issues. Students also work on some interesting projects such as ranking sports teams, looking into renewable energy alternatives and investing. Students even have the opportunity to co-write a paper with a professor with the possibility of getting published in a math journal.

**Required Skills:**
- Mathematics
- Statistical Analysis
- Computer Science & Programming
- Management
- Critical Thinking
- Problem Solving
- Written & Oral Communication

**Possible Employers:**
- US Department of Defense
- National Institute of Standards & Technology (NIST)
- National Aeronautic & Space Administration (NASA)
- Colleges & Universities
- Insurance Carriers
- Corporations
- Private Industries

**PROFESSIONAL ORGANIZATIONS:**
- American Mathematical Society
- American Statistical Association
- Association for Women in Mathematics
- Mathematical Association of America
- Society for Industrial & Applied Mathematics
- www.e-math.ams.org
- www.amstat.org
- www.awm-math.org
- www.maa.org
- www.siam.org

**FIND OUT MORE ABOUT CAREERS IN ACCOUNTING AT:**
- Mathematical Association of America
- www.maa.org/careers
- Occupational Outlook Handbook
- www.bls.gov/oco/ocos043.htm
- Sloan Career Cornerstone Center
- www.careercornerstone.org
### Applied Mathematics (BS) – Curriculum Guide

**Student Name:**

**Advisor:**

### GENERAL EDUCATION REQUIREMENTS

#### COMPETENCIES

**(Minimum grade of C- required in all competencies)**

- FS 0102 Freshman Seminar  
  *(if transferring in fewer than 18 credits)*

**Writing**

- ENG 0101 English Composition I
- ENG 0102 English Composition II

**Mathematics**

- MATH 0098 College Algebra II or higher *(see major)*

### THE HUMAN EXPERIENCE

Students are required to complete two courses designated as “Global”

**ARTS & LETTERS** *(ONE course MUST be literature; ONE course MUST be a creative, fine or performing Arts course)*

- Literature
- Arts
- Literature, Arts, Language

**BEHAVIORAL, ECONOMIC, & POLITICAL SCIENCES** *(Two different categories must be represented)*

**HISTORY, CULTURES, & PHILOSOPHICAL INQUIRY** *(ONE course MUST be History, and ONE course must be Cultures or Philosophical Inquiry)*

- HIST

**PHYSICAL, LIFE, & COMPUTATIONAL SCIENCES** *(ONE course must be a Physical Science, ONE must be a Life Science and ONE must include a lab)*

- Physical Science
- Life Science *(see major)*
- Lab

**PHYSICAL EDUCATION**

- PEDC

### MAJOR / CORE RELATED COURSES

- MATH 0135 Discrete Math *(3)*
- MATH 0140 Calculus I *(4)*
- MATH 0150 Calculus II *(4)*
- MATH 0201 Calculus III *(4)*
- MATH 0202 Ordinary Differential Equations *(3)*
- MATH 0206 Linear Algebra *(3)*
- MATH 1303 Mathematical Modeling *(3)*
- MATH 1312 Abstract Algebra & Number Theory *(3)*
- MATH 1309 Applied Probability and Statistics *(4)*
- MATH 1318 Introduction to Analysis *(4)*
- MATH 1452 Capstone: Mathematics *(3)*
- Upper level Math Elective *(3)*
- PHYS 0201 Foundation of Physics I

### OTHER REQUIRED COURSES:

- ENGR 0012 Engineering Analysis
- MATH 1320 Operations Research

* MATH 0098 does not meet the mathematics competency at the Pittsburgh campus

### According to your Degree Progress Report in MY.PITT.EDU upon successful completion of the current term:

- You will have **EARNED** _______ credit hours
- You **NEED** a minimum of _______ for 120 credit hours required for graduation. Additional courses may be necessary to meet the minimum curricular requirements.
- You will have earned _______ credit hours of Upper Level course work.
- You **NEED** _______ for the 30 credit hours required for graduation.

**NOTE:** This guide is unofficial. Completing the requirements on this sheet does NOT guarantee degree completion. Official degree completion information can be found in MY.PITT.EDU. Contact your Faculty Advisor and/or the Registrar’s Office with questions or concerns.