

**GEP FORMAT A**  
(SEMESTER-BY-SEMESTER CURRICULUM DISPLAY)

Current:                      Proposed: X      Proposed Effective Semester: **7/2009**

DEGREE TITLE: Bachelor of Science in Applied Mathematics

CONCENTRATION TITLE: Financial Mathematics

CURRENT DEGREE KEY: 17 AMF 088

FRESHMAN YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
MA 141, Calculus I <sup>A,8</sup>	4	MA 241, Calculus II <sup>A,8</sup>	4
ENG 101, Academic Writing & Research <sup>H,7</sup>	4	CH 101, Chemistry – A Molecular Science <sup>B</sup>	3
PMS 100 <sup>1</sup>	1	CH 102, General Chemistry Laboratory <sup>B</sup>	1
GEP Humanities, Social Sciences <sup>C,D</sup>	6	EC 205, Fundamentals of Economics <sup>D</sup>	3
PE 1xx, Physical Education Fitness and Wellness <sup>E</sup>	1	GEP Humanities, Social Sciences <sup>C,D</sup>	3
		Physical Education <sup>E</sup>	1
<i>Total: 16</i>		<i>Total: 15</i>	
SOPHOMORE YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
MA 242, Calculus III <sup>8</sup>	4	MA 405, Linear Algebra and Matrices <sup>8</sup>	3
MA 225, Foundations of Advanced Math <sup>8</sup>	3	MA 341, Applied Differential Equations I <sup>8</sup>	3
EC 301, Intermediate Microeconomics	3	ST 305, Statistical Methods	3
PY 205, Physics for Engineers & Scientists I <sup>B,2,7</sup>	4	PY 208, Physics for Engineers & Scientists II <sup>B,2,7</sup>	4
		GEP Interdisciplinary Perspectives <sup>G</sup>	3
<i>Total: 14</i>		<i>Total: 16</i>	
JUNIOR YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
MA 116, Intro. to Scientific Programming <sup>3,7</sup>	3	MA 426, Mathematical Analysis II <sup>8,11</sup>	3
MA 407, Introduction to Modern Algebra <sup>8</sup>	3	MA 421, Introduction to Probability	3
MA 425, Mathematical Analysis I <sup>8</sup>	3	ST 422, Intro. Math Statistics II	3
MA 401, Applied Differential Equations II <sup>8,9</sup>	3	or ST 372, Intro Statistical Inf Reg. Th <sup>10</sup>	
ST 421, Intro. Math Statistics I or ST 371, Intro Prob. Dist. Th <sup>10</sup>	3	Advised Electives <sup>6</sup>	3
		GEP Additional Breadth <sup>F</sup>	3
<i>Total: 15</i>		<i>Total: 15</i>	
SENIOR YEAR			
FALL SEMESTER	CREDITS	SPRING SEMESTER	CREDITS
MA 412, Long-term Actuarial Models	3	MA 413, Short-term Actuarial Models	3
EC 302, Intermediate Macroeconomics	3	Advised Electives <sup>6</sup>	12
Advised Electives <sup>6</sup>	3		
ENG 332, Communication for Bus. & Man.	3		
GEP Interdisciplinary Perspectives <sup>G</sup>	2-3		
<i>Total: 14-15</i>		<i>Total: 15</i>	
<b>Minimum Credit Hours Required for Graduation : 120<sup>I,J,K</sup></b>			

**Major/Program Footnotes:**

1. E 115 may substitute for PMS 100
2. An alternative to PY 205 and PY 208 is PY 201 and PY 202
3. CSC 112, CSC 114, or CSC 116 may be substituted for MA 116.
4. Advanced Writing course must be selected from ENG 331, ENG 332, or ENG 333
5. Free electives courses can not be MA 100, MA 101, MA 103, MA 107, MA 108, MA 111, MA 121, MA 131, MA 231, PY 131, PY 211, PY 212, ENG 100, 100-level Foreign Language Course (FL\*, LAT, GRK, PER)
6. Advised Electives are chosen in consultation with your advisor. At least one course must be chosen from the following Major Paper course list: MA 402, MA 427, MA 428, MA 432, MA 433, MA 435, MA 437, MA 491, MA 494, MA 544, MA/BMA 573, and MA/BMA 574.
7. At most one grade of D is permitted CH 101, CH 102, Introduction to Programming, the two courses satisfying the physics requirement, and the two courses satisfying the statistics requirement.
8. No grade below a C- is permitted in required math courses.

9. MA 501 may substitute for MA 401.
10. Either the two course sequence ST 421 and ST 422, or the two course sequence ST 371 and ST 372 are required.
11. MA 512 may be taken in place of MA 426.

**\*General Education Program (GEP) requirements and GEP Footnotes:**

To complete the requirements for graduation and the General Education Program, the following category credit hours and co-requisites must be satisfied.

University approved GEP course lists for each of the following categories can be found at <http://www.ncsu.edu/uap/academic-standards/gep/courselists/index.html>.

- A. **Mathematical Sciences** (6 credit hours – one course with MA or ST prefix)  
*Choose from the University approved GEP Mathematical Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: MA 141, MA 241*
- B. **Natural Sciences** (7 credit hours – include one laboratory course or course with a lab)  
*Choose from the University approved GEP Natural Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: CH 101, CH 102, PY 201, PY 202, PY 205, PY 208*
- C. **Humanities** (6 credit hours selected from two different disciplines/course prefixes)  
*Choose from the University approved GEP Humanities course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: none*
- D. **Social Sciences** (6 credit hours selected from two different disciplines/course prefixes)  
*Choose from the University approved GEP Social Sciences course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: EC 205*
- E. **Physical Education/Healthy Living** (2 credit hours – at least one 100-level Fitness and Wellness Course)  
*Choose from the University approved GEP Physical Education/Healthy Living course list.*
- F. **Additional Breadth** - (3 credit hours to be selected from the following checked University approved GEP course list) Humanities/Social Sciences/Visual and Performing Arts
- G. **Interdisciplinary Perspectives** (5 credit hours)  
*Choose from the University approved GEP Interdisciplinary Perspectives course list or the following course(s) if completed as part of the Major requirements may fulfill part or all of this requirement: none*
- H. **Introduction to Writing** (4 credit hours satisfied by completing ENG 101 with a C- or better )

**The following Co-Requisites must be satisfied to complete the General Education Program requirements:**

- I. **U.S. Diversity** (USD)  
*Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requisite. The following course(s) completed as part of the Major requirements may fulfill this requirement: none*
- J. **Global Knowledge** (GK)  
*Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requisite. The following course(s) completed as part of the Major requirements may fulfill this requirement: none*
- K. **Foreign Language proficiency** - Proficiency at the FL\_102 level is required for graduation.