Mathematics Education and Mathematics (Dual Major) (BS) (13MTHEDBS-13MTHEDMA)

Freshman Year

Fall Semester	Credit	Spring Semester	Credit
MA 141, Calculus I[A,4]	4	MA 241, Calculus II[A,4]	4
CH 101, Chemistry – A Molecular Science[B,5]	3	PY 205, Physics for Engineers & Scientists I[B,2,5]	4
CH 102, General Chemistry Laboratory[B,5]	1	Introduction to Programming[3,6]	3
ENG 101, Academic Writing & Research[H]	4	HES_***Health & Exercise Course[E]	1
E 115 Introduction to Computing Environments[1]	1	COM 112 Interpersonal Communication[D]	3
ED 100 Intro to Teaching in 21st Century[9]	2		
	15		15

Sophomore Year

Fall Semester	Credit	Spring Semester	Credit
MA 242, Calculus III[4]	4	MA 341, Applied Differential Equations I OR MA 351 Discrete Mathematics [4]	3
MA 225, Foundations of Advanced Math[4]	3	MA 405, Linear Algebra and Matrices[6]	3
PY 208, Physics for Engineers & Scientists II[B,2,5]	4	HES_*** Health & Exercise Studies Course[E]	1
GEP Interdisc. Persp. Reqt.[G, I, J]	3	EMS 204 Intro. to Teaching Mathematics[9]	2
GEP Humanities Requirement[C, I, J]	3	ED 204 Intro to Teaching[9]	2
		GEP Addtl. Breadth Reqt (HUM/SS/VPA)[F,I,J]	3
		EDP 304 Educational Psychology[9,D]	3
	17		17

Junior Year

Fall Semester	Credit	Spring Semester	Credit
MA 407 Introduction to Modern Algebra[6]	3	MA 425 Mathematical Analysis I[6]	3
MA 408 Found. of Euclidean Geometry[6]	3	Math Elective[4,6,7]	3
ELP 344 School and Society[9]	3	EMS 480 Teaching Mathematics with Technology[9]	3
ED 311 Class. Assess. Princ. & Pract.[9]	2	GEP Humanities Requirement [C,I,J]	3
ED 312 Class. Assess. Princ & Pract.: Prof. Lab[9]	1	MA 421 Intro to Probability[6,8]	3
ST 380 Probability & Stat. for the Physical Sci.[6,8]	3	Math Elective [4,6,7]	3
GEP Interdisc. Persp. Reqt.[G, I, J]	2-3		
	17-18		18

Senior Year

Fall Semester	Credit	Spring Semester	Credit
MA 426, or MA 512, or other MA Elective[4,6,7]	3	EMS 471: Student Teaching[10]	12
EMS 472 Teaching Math Topics in High School[9]	3		
MA Elective[4,6,7]	3		
EMS 490 School Math from an Adv. Persp.[9]	3		
ECI 416 Teaching Exceptional Students[9]	3		
EMS 470: Methods & Materials for Teaching Math[10]	3		
	18		12

Minimum Credit Hours Required for Graduation*[I,J,K]: **129**

Major/Program Footnotes

1. COS 100 may substitute for E 115

2. An alternative to PY 205 and PY 208 is PY 201 and PY 202

3. Introduction to programming course must be selected from MA 116, CSC 112, CSC 114, or CSC 116

4. A grade below C is not permitted in MA 141, 241, 242, 225, 341 or 351.

5. At most one grade below a **C-** is permitted in courses satisfying the science requirement.

6. At most one grade below a **C** is permitted in required mathematics courses >400, elective math courses, statistics, and computer science courses.

7. Math electives must be chosen from the following: MA 325, MA/LOG 335, MA 341, MA 351, MA 400> (except MA 403, MA 433, MA 507, MA 508, MA 509, MA 510, MA 511). A sequence of two 3-hour courses in an area of advanced mathematics is required.

8. The preferred statistics sequence is ST 380 with MA 421. Alternatives include ST 370 with MA 421, or ST 371 with ST 372, or ST 421 with ST 422. If ST 370 or ST 380 is taken, MA 421 will be an advanced mathematics elective. If ST 371/372 is taken, ST 371 will be a free elective. If ST 421/422 is taken, ST 421 will be a free elective.

9. A grade below a B- is not permitted in EMS 204. A grade below a C is not permitted in all other EMS, EDP, ECI, ELP, ED courses.

10.A grade of C or better is required in EMS 470 to continue in school placement full-time.

***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 https://oucc.dasa.ncsu.edu/general-education-program/.

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: BIO 181, BIO 183, CH 101, CH 102, PY 201 and PY 202 or PY 205 and 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: COM 112, EDP 304

E. Health & Exercise Studies (2 credit hours – at least one 100-level Health & Exercise Studies Course)
Choose from the University approved GEP Health & Exercise Studies course list.

F. Additional Breadth – (3 credit hours to be selected from the following checked University approved GEP course lists)
X Humanities/Social Sciences/Visual and Performing Arts or ___ Mathematical Sciences/Natural Sciences/Engineering

G. Interdisciplinary Perspectives (5-6 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.