Bachelor of Science (BS)  
Degree Code 260*  
Concentration Code 260E  

I. GENERAL EDUCATION CURRICULUM
Math 1110 will meet the Quantitative Literacy general education requirement.

II. MAJOR REQUIREMENTS (not including 4 s.h. counted in Area I, above)
2.0 major GPA is required for graduation. Major GPA calculation will include all courses taken in the major department, plus any other courses under II. Minimum of 18 semester hours of courses taken to fulfill major requirements must be courses offered by Appalachian.

A. Mathematics Common Core (14 hours)
- MAT 1110 4 Calculus with Analytic Geometry I (Pre: MAT 1025 w/min grade C-)
- MAT 1120 4 Calculus with Analytic Geometry II (Pre: MAT 1110 w/min grade C-)
- MAT 2110 3 Techniques of Proof (Pre: MAT 1120)
- MAT 2240 3 Introduction to Linear Algebra (Pre: MAT 1120)

B. Mathematics Courses for the Concentration (13 hours)
- MAT 2310 3 Computational Mathematics (Pre: MAT 1120)
- MAT 4310 3 Numerical Methods (Pre: MAT 2310)
- STT 3850 4 Statistical Data Analysis I (Pre: MAT 1110)
Choose one:
- MAT 3110 3 Introduction to Modern Algebra [WID] (Pre: RC 2001, MAT 2110 or 2510; Co: 2240)
- MAT 3220 3 Intro to Real Analysis I [WID] (Pre: RC 2001, MAT 2110 or 2510)

C. Capstone Requirements (4 hours) Choose one option:
OPTION 1: 4 hours
- MAT 4311 1 Capstone: Numerical Methods [CAP] (Co: MAT 4310)
- MAT 4000-level course 3

OPTION 2: Choose one 4-hour combination (courses taken in the same semester); [CAP] is Capstone course: each has CO: of first course in each pair below
- MAT 4010 1-3 Current Topics in Mathematics AND MAT 4011 1 Current Topics in Math [CAP]
- MAT 4140 3 Differential Geometry (Pre: MAT 2130; Co: MAT 2240) AND MAT 4141 1 Differential Geometry [CAP]
- MAT 4220 3 Intro to Real Analysis II (Pre: MAT 3220) AND MAT 4221 1 Intro to Real Analysis II [CAP]
- MAT 4340 3 Intro to Operations Research (Pre: MAT 2240, STT 3850; Sr st) AND MAT 4341 1 Intro to Oper Research [CAP]
- MAT 4420 3 Dynamical Systems Theory (Pre: MAT 3130 or 3310) AND MAT 4421 1 Dynamical Systems Theory [CAP]
- MAT 4590 3 Adv Topics in Differential Equations (Pre: MAT 3130; Sr st) AND MAT 4591 1 Adv Topics in Diff Equations [CAP]
- MAT 4710 3 Intro to Topology (Pre: MAT 3220, St st) AND MAT 4711 1 Introduction to Topology [CAP]
- MAT 4720 3 Abstract Algebra (Pre: MAT 3110; Sr st) AND MAT 4721 1 Abstract Algebra [CAP]
- MAT 4990 3 Numerical Linear Algebra (Pre: MAT 3130; Sr st) AND MAT 4991 1 Numerical Linear Algebra [CAP]
- STT 4820 3 Design & Analysis of Experiments (Pre: STT 3820; Sr st) AND STT 4821 1 Design & Analysis of Exper [CAP]
- STT 4830 3 Linear Regression Models (Pre: MAT 2240; STT 3830; Sr st) AND STT 4831 1 Linear Regression Models [CAP]
- STT 4840 3 Regression & Time Series Forec (Pre: MAT 2240; STT 3250, 3850) AND STT 4841 1 Regression & Time Series Forec [CAP]

D. Approved Electives: 11 hours in mathematical sciences** to bring total number of hours in AREA II to 65
(At least 3 hours in MAT if STT combination was chosen in Area C. Capstone)

E. Computational Concentration (14 hours)
- C S 1440 4 Computer Science I (Pre: MAT 1020 or 1025 w/min grade C-)
- C S 2440 4 Computer Science II (Pre: CS 1440 or 1445 w/min grade C; Co: CS 1100)
- C S 3430 3 Database (Pre: CS 2440 with min grade of C)
- C S 3460 3 Data Structures (Pre: CS 2440 with min grade of C)

F. Electives: 9 hours** of Approved courses in the sciences, which may include computer science
** Must be approved by mathematical sciences advisor.

III. MINOR (optional)

IV. ELECTIVES (taken to total 122 hours for the degree) 2 semester hours of free electives must be outside the major discipline.