Bachelor of Science (BS) 2017-2018 Program of Study for Mathematics Majors
Degree Code 260* Concentration Code 260B GENERAL

I. GENERAL EDUCATION CURRICULUM................................................................................................................................. 44

Math 1110 will meet the Quantitative Literacy general education requirement.

II. MAJOR REQUIREMENTS (not including 4 s.h. counted in Area I, above).............................................................................................61

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 (15 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 _____ (4) Techniques of Proof (Pre: MAT 1120)
MAT 2240 _____ (3) Introduction to Linear Algebra (Pre: MAT 1120)

B. Mathematics Courses for the Concentration (17 hours)
MAT 2130 _____ (4) Calculus with Analytic Geometry III (Pre: MAT 1120 w/min grade C-)  
MAT 3110 _____ (3) Intro 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)
Choose one:
MAT 3130 _____ (3) Intro to Differential Equations (Pre: MAT 1120)
MAT 3310 _____ (3) Discrete & Continuous Mathematical Models (Pre: MAT 1120; Co: 2240)
Choose one:
STT 3250 _____ (4) Fundamentals of Probability (Pre: MAT 2130)
STT 3850 _____ (4) Statistical Data Analysis (Pre: MAT 1110)

C. Capstone Requirements (4 hours) Choose one 4-hour combination (courses to be taken in the same semester);
[CAP] is Capstone course: each has corequisite 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 4310___ (3) Numerical Meth (Pre: MAT 2310, 2240; rec: MAT 2130 or 3130) AND MAT 4311___ (1) Numerical Methods [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 4310; 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 Exp [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 Major Electives: 8 hours in mathematical sciences to bring total hrs in AREA II to 65 hrs

3 hours at the 4000 level _____________________________

Remaining 5 hours: (At least 3 hours in MAT if STT combination was chosen in Area C. Capstone) _____________________________

E. A Career Support Concentration (at least 21 hours, which must be approved by the mathematical sciences advisor)

_________________ ___________________ ___________________

_________________ ___________________ ___________________

III. MINOR (optional)

IV. ELECTIVES (taken to total 122 hours for the degree) .....................................................................................................................17

2 semester hours of free electives must be outside the major discipline 122