Bachelor of Science (BS)  2016-2017  Program of Study for Mathematics Majors
Degree Code 260*  (Revised 3/2017)  STATISTICS

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 (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 Concentration (16 hours)
MAT 2130       (4) Calculus with Analytic Geometry III (Pre: MAT 1120 w/min grade C-)
MAT 2310       (3) Computational Mathematics (Pre: MAT 1120)
MAT 3130       (3) Introduction to Differential Equations (Pre: MAT 1120)
MAT 3220       (3) Introduction to Real Analysis [WID] (Pre: RC 2001, MAT 2110 or 2510)
MAT 4310       (3) Numerical Methods (Pre: MAT 2310)

C. Capstone Requirements (4 hours) Choose one option:

OPTION 1: 4 hours
MAT 4311       (1) Capstone: Numerical Methods [CAP] (Co: MAT 2310 and 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 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 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 3830, 3850) AND STT 4841     (1) Regression &Time Series Forec [CAP]

D. Approved Electives: 6 hours in mathematical sciences to bring total hrs in AREA II to 65 __________________________________________

E. Statistics Concentration (25 hours)
STT 3250     (4) Fundamentals of Probability (Pre: MAT 2130)
STT 3850     (4) Statistical Data Analysis I (Pre: MAT 1110)
STT 3851     (3) Statistical Data Analysis II [WID] (Pre: RC 2001, STT 3850)
5 hours of approved statistics electives** at or above STT 3830 (excluding STT 4811 and 4812) __________________________
9 hours of approved electives** in related coursework which may include courses from outside mathematical sciences

** Must be approved by 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