

I. GENERAL EDUCATION CURRICULUM 44

Math 1110 will count toward Quantitative Literacy general education requirement.

II. LANGUAGE (Completion of 6 semester hours at the *intermediate level, or higher) 6

_____ 1040 _____ and 1050 _____ or 1060 _____; or higher level courses _____

**NOTE: Language 1010 and 1020 (or 1030) are prerequisites for the intermediate levels. FL 1050 or 1060 may be used in Gen Ed Liberal Studies Experience*

III. MAJOR REQUIREMENTS (not including 4 s.h. counted in Area I, above) 31

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 III. No more than 46 semester hours of Mathematics courses may be counted toward the BA Degree.

1. Mathematics Major Requirements: (28-29 s.h.)

- 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 2130 _____ (4) Calculus with Analytic Geometry III (*Pre: MAT 1120 w/min grade C-*)
- MAT 2110 _____ (3) Techniques of Proof (*Pre: MAT 1120*)
- MAT 2240 _____ (3) Introduction to Linear Algebra (*Pre: MAT 1120*)

Choose one:

- MAT 3130 _____ (3) Intro Differential Equations (*Pre: MAT 1120*)
- STT 3850 _____ (4) Statistical Data Analysis (*Pre: MAT 1110*)

Choose one WID course: (Pre for WID: RC 2001, MAT 2110 or 2510)

- MAT 3110 _____ (3) Intro to Modern Algebra [WID] (*Co: 2240*)
- MAT 3220 _____ (3) Intro to Real Analysis I [WID]

Choose one 4 hour combination (courses must be taken in same semester);

[CAP] is Capstone course: each has corequisite of first class 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 (<i>Pre: MAT 2130; Co: MAT 2240</i>) | AND MAT 4141 _____ (1) Differential Geometry [CAP] |
| MAT 4220 _____ (3) Intro to Real Analysis II (<i>Pre: MAT 3220</i>) | AND MAT 4221 _____ (1) Intro to Real Analysis II [CAP] |
| MAT 4310 _____ (3) Numerical Methods (<i>Pre: MAT 2310</i>) | AND MAT 4311 _____ (1) Numerical Methods [CAP] |
| MAT 4340 _____ (3) Intro to Operations Research (<i>Pre: MAT 2240, STT 3 850; Sr st</i>) | AND MAT 4341 _____ (1) Intro to Oper Research [CAP] |
| MAT 4420 _____ (3) Dynamical Systems Theory (<i>Pre: MAT 3130 or 3310</i>) | AND MAT 4421 _____ (1) Dynamical Systems Theory [CAP] |
| MAT 4590 _____ (3) Adv Topics in Differential Equations (<i>Pre: MAT 3130; Sr st</i>) | AND MAT 4591 _____ (1) Adv Topics in Diff Equations [CAP] |
| MAT 4710 _____ (3) Intro to Topology (<i>Pre: MAT 3220; St st</i>) | AND MAT 4711 _____ (1) Introduction to Topology [CAP] |
| MAT 4720 _____ (3) Abstract Algebra (<i>Pre: MAT 3110; Sr st</i>) | AND MAT 4721 _____ (1) Abstract Algebra [CAP] |
| MAT 4990 _____ (3) Numerical Linear Algebra (<i>Pre: MAT 4310; Sr. st</i>) | AND MAT 4991 _____ (1) Numerical Linear Algebra [CAP] |
| STT 4820 _____ (3) Design & Analysis of Experiments (<i>Pre: STT 3820; Sr st</i>) | AND STT 4821 _____ (1) Design & Analysis of Exper [CAP] |
| STT 4830 _____ (3) Linear Regression Models (<i>Pre: MAT 2240; STT 3830; Sr. st</i>) | AND STT 4831 _____ (1) Linear Regression Models [CAP] |
| STT 4840 _____ (3) Regression & Time Series Forec (<i>Pre: MAT 2240; STT 3250, 3850</i>) | AND STT 4841 _____ (1) Regression & Time Series Forec [CAP] |

HONORS STUDENTS
You may substitute MAT 2510 Sophomore Honors Seminar for MAT 2110, and MAT 4510 Senior Honors Thesis for your Capstone. This will slightly change your elective requirements to ensure you earn 35 hours in Area III. Please see your advisor for approval and more information.

2. Mathematics Electives: (6-7 s.h. to bring total hours in AREA III to 35 hours; at least 3 hours must be from 4000 level);

Any course listed above but not used to meet requirements above, may be used in this section.

- | | |
|---|---|
| MAT 2310 _____ (3) Computational Math (<i>Pre: MAT 1120</i>) | MAT 4400 _____ (1-3) Senior Research (<i>Pre: 3 sh 4000 level MAT</i>) |
| MAT 2500 _____ (1-3) Independent Study | STT 3250 _____ (4) Fundamentals of Probability (<i>Pre: MAT 2130</i>) |
| MAT 3010 _____ (2) Survey in History of Math (<i>Pre: MAT 1120; MAT 2110 or 2510</i>) | STT 3820 _____ (3) Statistical Methods I (<i>Pre: STT 2810 or 2820</i>) |
| MAT 3310 _____ (3) Discrete & Continuous Math Models (<i>Pre: MAT 1120; Co: 2240</i>) | STT 3830 _____ (3) Statistical Methods II (<i>Pre: STT 3820</i>) |
| MAT 3330 _____ (3) Financial Mathematics (<i>Pre: MAT 1120</i>) | STT 3840 _____ (3) Elem Prob & Surv Smpg (<i>Pre: STT 2810 or 2820</i>) |
| MAT 3350 _____ (3) Intro to Mathematical Biology (<i>Pre: MAT 1120, Jr stdng</i>) | STT 3851 _____ (3) Stat Data Anlys II [WID] (<i>Pre: STT 3850; RC 2001</i>) |
| MAT 3500 _____ (1-3) Independent Study | STT 4811 _____ (3) Stat Concepts & Applications I (<i>Pre: MAT 1120</i>) |
| MAT 3510 _____ (3) Junior Seminar | STT 4812 _____ (3) Stat Concepts & Applications II (<i>Pre: STT 4811</i>) |
| MAT 3610 _____ (3) Intro to Geometry (<i>Pre: MAT 1120; MAT 2110 or 2510</i>) | |

IV. MINOR REQUIRED 12-21

Minimum of 9 semester hours of courses taken to fulfill minor requirements must be courses offered by Appalachian.

V. ELECTIVES (taken to total 122 hours for the degree) 20-29

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