FINAL: 4/29/14

MINUTES OF THE MEETING
OF THE ACADEMIC POLICIES AND PROCEDURES COMMITTEE
April 2, 2014

The AP&P Committee met on Wednesday, April 2, 2014 at 3:00 p.m. in the William C. Strickland Conference Room of I.G. Greer Hall.

Committee members present: Mr. Kern Maass (Chair), Dr. Dinesh Davé, Dr. Lisa Curtin Grizzard, Dr. Kim Hall, Dr. Joe Klein, Dr. Pamela Lundin, Dr. Ben Powell, Mrs. Betsy Williams, Mr. Thurman Clark, Mr. Nick Smith, Mr. Chris Carpenter, Ms. Katherine Glassman

Committee members excused: Dr. Bill Bauldry, Dr. Jon Beebe, Dr. Ellie Hoffman, Mr. Edgar Peck, Dr. Chris Yang

At 3:04 p.m., Kern Maass noted that we have a quorum and he called the meeting to order.

Minutes

January 15, 2014

VOTE 1 - Passed

February 19, 2014

VOTE 2 - Passed

Announcements

"For Information Only" memo/list of items approved by the General Education Council on March 21, 2014.

(Effective: Fall 2015)

Revise First Year Seminar Course Description (see proposal UC_GE_2014_1 below).

Program Assessment Rubrics (see links to full documents)
http://generaleducation.appstate.edu/thinking-critically-creatively
http://generaleducation.appstate.edu/communicating-effectively
http://generaleducation.appstate.edu/making-local-global-connections
http://generaleducation.appstate.edu/understanding-responsibilities-community-membership

New Business

Order of Presentation:
Discussion on Voting
University College
College of Arts and Sciences

Discussion on method of voting

Dr. Mike Mayfield announced that a subcommittee had met to discuss the voting process for AP&P. AP&P is a University committee and should be following Robert's Rules of Order during the AP&P meetings. AP&P will now use the hand/voice votes for the official record but will continue to use the voting sheets as reference.

Dr. Martha McCaughey presented a proposal from University College.

The proposal from First Year Seminar was approved as follows: (EFFECTIVE: FALL 2015)

UC_GE_2014_1 Change the course description for UCO 1200. First Year Seminar.

The First Year Seminar (UCO 1200) provides students with an introduction to the four goals of a liberal education at Appalachian State University. Specifically, students will practice (1) thinking critically and creatively and (2) communicating effectively. In addition, students will be introduced to the learning goals of (3) making local-to-global connections and (4) understanding responsibilities of community membership.

While each First Year Seminar course engages a unique topic examined from multiple perspectives, each course also introduces students to a common set of transferable skills. As such, First Year Seminar facilitates student engagement with: fellow students, the university, the community, and the common reading; essential college-level research and information literacy skills; and the habits of rigorous study, intellectual growth, and lifelong learning.

Note: UCO 1200 or an equivalent "First Year Seminar" course (such as HON 1515, Freshman Honors Seminar, or WGC 1103, Investigations: Local) is required of all freshmen completing General Education requirements. It is also required of all transfer students with less than 30 semester hours of transferable work or who graduated from high school less than one year before their matriculation date. Transfer students with 30-59 semester hours of transferable work are eligible to enroll, but it is not required. Students with 60 or more earned hours are not eligible to enroll without permission from the Office of General Education.

VOTE 3 - Passed

Dr. Dru Henson presented the proposals from the College of Arts and Sciences for the Department of History and the Department of Mathematical Sciences.

The proposals from the **Department of History** were approved as follows: (EFFECTIVE: FALL 2015)

CAS_HIS_2013_02 Course Deletion:
HIS 1300. Introduction to Latin America: History and Society (3).F.

CAS_HIS_2013_03 Course Deletion:
HIS 3121. History of Ancient Medicine (3).S.

CAS_HIS_2013_04 Course Deletion:
HIS 3925. Evolution and Creationism in Historical Context (3).S.Odd-numbered years.

CAS_HIS_2013_05 Course Deletion:
HIS 3926. Science, Technology, and Society in the Atomic Age (3).S.Even-numbered years.

CAS_HIS_2013_06 Course Deletion:
HIS 3927. Scientific Revolution (3).F.Odd-numbered years.

VOTE 4 – Passed

The proposals from the **Department of Mathematical Sciences** were approved as amended (see vote 5) as follows: (EFFECTIVE: FALL 2015)

CAS_MAT_2013_03 Change the prerequisite statement for **MAT 4140. Differential Geometry** to read as follows:
Prerequisite: MAT 2130. Corequisite: MAT 2240.

CAS_MAT_2013_04 Change the description of the Honors Program in Mathematical Sciences in the Undergraduate Bulletin by deleting the sentence: Those meeting these requirements with grades of "A" in the honors courses and earning a 3.65 GPA in mathematics will graduate with "highest honors" in mathematics.

CAS_MAT_2013_05 Delete the Bachelor of Science in Mathematics, Secondary Education (262A/13.1311)[T] and add a concentration in Secondary Education (260I)[T] to the Bachelor of Science in Mathematics (260*/27.0101). The new program of study is at the end of the minutes.

CAS_MAT_2013_06 Change the course title, description, and prerequisite statement of **STT 4840. Forecasting and Time Series** to read as follows:

STT 4840. Regression and Time Series Forecasting (3).F.
Introduction to regression and time series forecasting models applied to problems in economics, business and the social sciences with emphasis on the use of computer technology. Topics include least squares parameter estimation, simple and multiple linear regression models, trend and seasonal regression models, seasonal and non-seasonal ARIMA models, model assumptions diagnostics, variable selection, model evaluation and monitoring, smoothing techniques and dealing with non-stationarity. Prerequisites: MAT 2240, STT 3250, and STT 3850 or permission of the instructor. (NUMERICAL DATA; COMPUTER) (ND Prerequisite: passing the math placement test or successful completion of MAT 0010.)

CAS_MAT_2013_07 Course Addition:
STT 3250. Fundamentals of Probability (4).S.
Topics include a study of sample spaces, counting rules, conditional probability and independence, random variables and their properties, moment generating functions, named distributions, both discrete and continuous, transformations, the Central Limit Theorem, covariance and correlation coefficients, order statistics, and multivariate probability distributions. Prerequisite: MAT 2130.

CAS_MAT_2013_08 Delete the following STT courses:

STT 4250. Probability Modeling With Applications (3).On Demand.
POS affected: 260B, 284D
Courses affected: CS 3463, MAT 4340

STT 4860. Probability Models and Statistical Inference I (3).F.
POS affected: 106A, 260B, 260H, 284D
Courses affected: STT 4865

STT 4865. Statistical Inference II (3).S.
POS affected: 106A, 260H
Courses affected: MAT 4330,

CAS_MAT_2013_09 Change the prerequisite/corequisite statement for **MAT 4330. Senior Seminar in Actuarial Sciences** to read as follows:
Prerequisites: MAT 3330 and STT 3250.

POS affected: 106A

CAS_MAT_2013_10 Revise the program of study for the Bachelor of Science in Actuarial Science (106A/52.1304). The new program of study is at the end of the minutes.

CAS_MAT_2013_11 Revise the program of study for the Bachelor of Science in Mathematics (260*/27.0101) with a concentration in Statistics (260H). The new program of study is at the end of the minutes.

CAS_MAT_2013_12 Remove the dual-listing from **STT 4811. Statistical Concepts and Applications I (3).F.** (see CAS_MAT_2013_15)

CAS_MAT_2013_13 Remove the dual-listing from **STT 4812. Statistical Concepts and Applications II with Probability Modeling (3).S.** (see CAS_MAT_2013_16)

CAS_MAT_2013_14 Delete the following STT courses:
STT 5860. Probability Models and Statistical Inference I (3).F.
STT 5865. Statistical Inference II (3).S.

CAS_MAT_2013_15 Change the course description and prerequisite statement for STT 5811 and remove the dual-listing with STT 4811 to read as follows:

STT 5811. Statistical Concepts and Applications I (3).F.
This course introduces students at the post-calculus level to statistical concepts, applications, and theory. Topics include: counting methods, basic probability, sampling methods, an introduction to the most common discrete and continuous random variables, sampling distributions, and single parameter inferential methods including confidence intervals and hypothesis testing using large-sample methods, exact methods, and computationally intensive methods such as the bootstrap. Statistical concepts will be developed through simulations, and applications will focus on statistical problem-solving. The course will introduce prospective college teachers to the content and pedagogy recommended in the American Statistical Association's Guidelines with regard to statistics and probability. Prerequisites: MAT 1120 (Calculus with Analytic Geometry II) and STT 2810 (Introduction to Statistics) or equivalent course.

CAS_MAT_2013_16 Change the course description and prerequisite statement for STT 5812 and remove the dual-listing with STT 4812 to read as follows:

STT 5812. Statistical Concepts and Applications II with Probability Modeling (3).S.
This course is a continuation of STT 5811. Topics include: an introduction to the design of experiments, exploring and modeling relationships between variables, including chi-square analysis, regression models, ANOVA, and logistic regression. Inferential procedures for each of these models will also be covered. Computationally intensive methods, such as permutation tests, will also be introduced. Statistical concepts will be developed through simulations, and applications will focus on statistical problem-solving and appropriate communication of results of a statistical analysis. Students will use two or more statistical software packages during the course. The goal of the course is to provide sufficient theory and methodology to prepare students to teach the introductory level statistics course. Prerequisite: STT 5811 or permission of instructor.

CAS_MAT_2013_17 Revise the program of study for the Master of Arts in Mathematics (264*/27.0101) with a concentration in College Teaching (264B).

Course Requirements for the Master of Arts in Mathematics with a Concentration in College Teaching (Code: 264B) **Semester Hours Required (minimum): 36**		
Required Courses	• MAT 5415: Seminar in the Pedagogy of Mathematics (1+1+1=3) • MAT 5420: Teaching Apprenticeship (1+1+1=3) • MAT 5610: Analysis I (3) • MAT 5620: Analysis II (3) • STT 5811: Statistical Concepts and Applications I (3) • STT 5812: Statistical Concepts and Applications II (3)	18
Related Coursework	• Choose two from the following courses. o MAT 5125: History of Mathematics (3) o MAT 5210: Abstract Algebra (3) o MAT 5230: Linear Algebra (3) o MAT 5330: Mathematical Models (3) o MAT 5590: Advanced Topics in Differential Equations (3)	6
Electives	6 s.h. of graduate courses; students may with permission take 3 s.h. outside of mathematical sciences. For students interested in pursuing careers at the college level the following are recommended: HE 5420, HE 5440, HE 5630, or HE 6090.	6
Capstone Component (CHOOSE ONE)	**Internship and Research** • HE 6900: Higher Education Internship/Field Study (3) • MAT 5600: Directed Research in Mathematical Sciences (3; may be taken as 1+1+1, 2+1, or 3) **OR** **Thesis** • MAT 5999: Thesis (6) **OR** **Course and Research** • MAT 5600: Directed Research in Mathematical Sciences (3; may be taken as 1+1+1, 2+1, or 3) • 3 s.h. of graduate coursework in the mathematical sciences	6

Other Requirements for the MA in Mathematics:

- **Thesis**: Optional part of capstone
- **Proficiency**: Demonstrated proficiency in the use of technology, subject to the approval of the program director.
- **Candidacy**: Required for thesis option; awarded upon approval of thesis committee and prospectus
- **Comprehensive**: Written and oral examinations are required.
- **Product of Learning**: Not Required

CAS_MAT_2013_18 Revise the program of study for the Bachelor of Science in Mathematics (260*/27.0101) with a concentration in General Mathematics (260B). The revised program of study is at the end of the minutes.

Amend the Program of Study for the Bachelor of Science in Mathematics with a Concentration in General Mathematics (260B/27.0101) to correct the Elective Hours to read 9-12.

VOTE 5 – Passed

Approve the Department of Mathematical Sciences proposals as amended.

VOTE 6 - Passed

Old Business

Other

Tina Hogan, Pete Wachs, and Bobby Sharp discussed the Dean's Council proposal to establish an Institutional Effectiveness Cycle which will be on the agenda for the April 30th AP&P meeting. The proposal plus two additional documents from IRAP will be posted on AsULearn.

Adjournment

VOTE 7 - Passed

ACADEMIC POLICIES AND PROCEDURES COMMITTEE
April 2, 2014
Unofficial Vote Record

Vote Symbols: Y (Yes) N (No) A (Abstain)

Committee Members	1	2	3	4	5	6	7						
Bill Bauldry	-	-	-	-	-	-	-						
Jon Beebe	-	-	-	-	-	-	-						
Karen Caldwell	-	-	-	-	-	-	-						
Dinesh Davé	Y	Y	Y	Y	Y	Y	Y						
Lisa Curtin Grizzard	A	Y	Y	Y	Y	Y	Y						
Kim Hall	Y	Y	Y	Y	Y	Y	Y						
Ellie Hoffman	-	-	-	-	-	-	-						
Joe Klein	Y	Y	Y	Y	Y	Y	Y						
Pamela Lundin	Y	Y	Y	Y	Y	Y	Y						
Kern Maass	Y	Y	Y	Y	Y	Y	Y						
Edgar Peck	-	-	-	-	-	-	-						
Ben Powell	Y	Y	Y	Y	Y	Y	Y						
Betsy Williams	Y	Y	Y	Y	Y	Y	Y						
Chris Yang	-	-	-	-	-	-	-						
Thurman Clark	Y	Y	Y	Y	Y	Y	Y						
Chris Carpenter	Y	Y	Y	Y	Y	Y	Y						
Katherine Glassman	Y	Y	Y	Y	Y	Y	Y						
Nick Smith	Y	Y	Y	Y	Y	Y	Y						

The recommendations from the April 2, 2014 Academic Policies and Procedures Committee meeting are approved.

Lori Stewart Gonzalez 4-29-14
Lori Stewart Gonzalez Date
Provost and Executive Vice Chancellor

2015-2016
PROPOSED

Bachelor of Science ~~(BS) Teaching~~ **Program of Study for Mathematical Sciences Majors**
Degree Code 260* ~~262A~~ **MATHEMATICS**
Concentration Code 260X **SECONDARY EDUCATION LICENSURE**
Student Name: _____ **Date_____**

I. GENERAL EDUCATION CURRICULUM 44

Math 1110 will count toward Quantitative Literacy general education requirement.

II. PROFESSIONAL EDUCATION REQUIREMENTS 24

A minimum grade of C is required in each professional education course. CI 2300 & FDN 2400 are required prior to admission to Teacher Educ.

CI 2300 _____ (2) Teaching and Learning in the Digital Age *(Entry course to teacher education)*
FDN 2400 _____ (2) Critical Perspectives on Teaching and Learning *(Pre or Co: CI 2300) (Entry course to teacher education)*
PSY 3010 _____ (3) Psychology Applied to Teaching *(Pre or Co: CI 2300)*
SPE 3300* _____ (3) Creating Inclusive Learning Communities *(Pre: CI 2300, FDN 2400, PSY 3010)*
C I 3400* _____ (2) Policies and Practice in Educational Assessment *(Pre: CI 2300, FDN 2400, PSY 3010)*
C I 4900 _____ (12) Student Teaching **[CAP]** *(All courses in professional core must be completed with grades of C (2.0) or higher prior to student teaching, along with other courses (including methods and reading) identified within the major.*

PROFICIENCIES:
Reading _____
English _____
Speech _____

*Admission to Teacher Education required.

NOTE: To be admitted to the Teacher Education Program students must take and satisfy testing requirements for Reading, Writing and Math areas of the PRAXIS (PPST or CBT). The PRAXIS II Area Exams are required for student teaching.

III. MAJOR REQUIREMENTS (not including 4 s.h. counted in Area I, above) 44

2. 0 major GPA is required for graduation. Major GPA calculation will include <u>all</u> courses taken in the major department, plus any other courses under III. Minimum of 18 semester hours of courses taken to fulfill major requirements must be courses offered by Appalachian.

A. Area of Specialization in Preparation for Teaching: (46-47 hours)

<u>Mathematics</u>:

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 2240 _____ (3) Introduction to Linear Algebra *(Pre: MAT 1120)*
MAT 3010 _____ (2) Survey in the History of Mathematics *(Pre: MAT 1120, 2110 or 2510)*
MAT 3015 _____ (2) Junior Seminar for Mathematics Majors in Education *(Pre: MAT 2240, 3010)*
MAT 3110* _____ (3) Introduction to Modern Algebra **[WID]** *(Pre: ENG 2001, MAT 2110 or 2510; Co: 2240)*
MAT 3220* _____ (3) Introduction to Real Analysis I **[WID]** *(Pre: ENG 2001, MAT 2110 or 2510)*
MAT 3310 _____ (3) Discrete and Continuous Mathematical Models *(Pre: MAT 1120; Co: 2240)*
MAT 3520 _____ (1) Instructional Assistance *(Pre: Jr./Sr. standing)*
MAT 3610* _____ (3) Introduction to Geometry *(Pre: MAT 1120, 2110 or 2510)*
MAT 4015 _____ (3) Senior Seminar for Mathematics Majors in Education *(Pre: MAT 3015, 3 s.h. 4000-level MAT/STT)*
STT 4811 _____ (3) Statistical Concepts and Applications I *(Pre: MAT 1120)*
STT 4812 _____ (3) Statistical Concepts and Applications II with Probability Modeling *(Pre: STT 4811)*

** Grade of C required in MAT 1120, 3610, and 3110 or 3220 for CI 4900*

Choose one:

MAT 2110 _____ (3) Techniques of Proof *(Pre: MAT 1120)*
MAT 2510 _____ (4) Sophomore Honors Seminar *(Pre: MAT 1120)*

5-6 s.h. approved courses in Mathematical Sciences **to bring total hrs in AREA III to 48 hrs** (at least 3 s.h. MAT at 4000 level):

_____ _____

B. Other Required Courses (2 hours)

<u>Education</u>:

C I 3080* _____ (2) Teaching High School Math
**Minimum "C" grade required*

Student Signature: _____
Advisor Signature: _____
Chairperson Signature: _____
Date: _____ **Date Sent to Dean's Office: _____**

IV. MINOR (optional)

V. ELECTIVES (taken to total 122 hours for the degree) .....<u>10</u>

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

Bachelor of Science (BS) Non-Teaching **2015-2016** **PROPOSED** **Program of Study for Mathematical Sciences Majors**
Degree Code 106A **ACTUARIAL SCIENCES**
Student Name: _____ **Date_____**

I. GENERAL EDUCATION CURRICULUM 44

Math 1110 will count toward Quantitative Literacy Gen Ed requirement. ECO 2030 will count towards Gen Ed perspectives, depending on choices.

II. MAJOR REQUIREMENTS (not including 4 s.h. counted in Area I, above) 65

2.0 major GPA is required for graduation. Major GPA calculation will include <u>all</u> 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.
Course requirements for the Bachelor of Science degree in actuarial sciences are as follows (with program subject to the approval of the advisory committee). An acceptable program consists of at least 69 semester hours but no more than 80, with a minimum of 33 hours in the Department of Mathematical Sciences.

A. Mathematics – ~~37~~ 35 s.h.

MAT 1110	_____	(4)	Calculus w/ Analytic Geometry I *(Pre: MAT 1025 w/min grade C-)*
MAT 1120	_____	(4)	Calculus w/ Analytic Geometry II *(Pre: MAT 1110 w/min grade C-)*
MAT 2130	_____	(4)	Calculus w/ Analytic Geometry III *(Pre: MAT 1120 w/min grade C-)*
MAT 2240	_____	(3)	Introduction to Linear Algebra *(Pre: MAT 1120)*
MAT 3330	_____	(3)	Financial Mathematics *(Pre: MAT 1120)*
MAT 4330	_____	(3)	Senior Seminar in Actuarial Sciences **[CAP]** *(Pre: MAT 3330; Co: STT 4865)*
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: ENG 2001; STT 3850)*
STT 4840	_____	(3)	~~Forecasting & Time Series~~ Regression & Time Series Forecasting *(Pre: STT 3250 & 3850; MAT 2240)*
~~STT 4860~~	~~_____~~	~~(3)~~	~~Probability Models & Statistical Inference I *(Pre: MAT 2130)*~~
~~STT 4865~~	~~_____~~	~~(3)~~	~~Statistical Inference II *(Pre: STT 4860)*~~

B. Business – 30 s.h.

ACC 2100	_____	(3)	Principles of Accounting I *(Pre: 24 sh college credit)*
ECO 2030	_____	(3)	Principles of Economic – Price Theory
ECO 2040	_____	(3)	Principles of Economics – Macro *(Pre: ECO 2030)*
FIN 3071	_____	(3)	Principles of Risk Management and Insurance
FIN 3072	_____	(3)	Personal Insurance *(Pre: ECO 3071)*
FIN 3680	_____	(3)	Introduction to Finance *(Pre: ACC 2100; MAT 1030 or 1110)*
FIN 3690	_____	(3)	Financial Management *(Pre: FIN 3680)*
FIN 3890	_____	(3)	Survey of Investments *(Pre: FIN 3680)*
FIN 4770	_____	(3)	Derivatives & Financial Risk Management *(Pre: FIN 3890)*
LAW 2150	_____	(3)	Legal Environment of Business

C. Electives – ~~2~~ 4 s.h.

Two hours of approved electives** in Mathematical Sciences or Business (no more than 6 additional elective hours can be taken in Business).

**Must be approved by advisory committee.

III. MINOR (optional)

Student Signature: _____
Advisor Signature: _____
Chairperson Signature: _____
Date: _____ **Date Sent to Dean's Office: _____**

IV. ELECTIVES (taken to total 122 hours for the degree) 13

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

2015-2016
PROPOSED

Bachelor of Science (BS)
Degree Code 260*
Concentration Code 260H
Student Name: _____

Program of Study for Mathematical Sciences Majors
STATISTICS
Date_____

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 <u>all</u> 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 (14-15 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 2240	_____	(3) Introduction to Linear Algebra *(Pre: MAT 1120)*

<u>Choose one:</u>

MAT 2110	_____	(3) Techniques of Proof *(Pre: MAT 1120)*
MAT 2510	_____	(4) Sophomore Honors Seminar *(Pre: MAT 1120)*

B. General Mathematics Concentration (25-26 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: ENG 2001, MAT 2110 or 2510)*
MAT 4310	_____	(3) Numerical Methods *(Pre: MAT 2310)*

<u>Choose one</u>:

MAT 4040	_____	(1) Mathematics Capstone **[CAP]** *(Pre: MAT 3110 or 3220; Sr. standing)*
MAT 4510	_____	(3) Senior Honors Thesis **[CAP]** *(Pre: MAT 3510; 3.45+ GPA in math)*

6-9 hours of approved electives** in mathematical sciences **to bring total hrs in AREA II to 65** (3 hours must be at 4000 level)

_____

C. 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: ENG 2001, STT 3850)*
~~STT 4860~~	~~_____~~	~~(3) Probability Models & Statistical Inference I *(Pre: MAT 2130)*~~
~~STT 4865~~	~~_____~~	~~(3) Statistical Inference II *(Pre: STT 4860)*~~

~~3~~ 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 advisory committee.*

III. MINOR (optional)

Student Signature: _____
Advisor Signature: _____
Chairperson Signature: _____
Date: _____ Date Sent to Dean's Office: _____

IV. ELECTIVES (taken to total 122 hours for the degree) ..... <u>17</u>
2 semester hours of free electives must be outside the major discipline. 122

2015-2016
PROPOSED

Bachelor of Science (BS) **Program of Study for Mathematics Majors**
Degree Code 260*
Concentration Code 260B **GENERAL**
Student Name: _____ **Date_____**

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 (14-15 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 2240 _____ (3) Introduction to Linear Algebra *(Pre: MAT 1120)*
Choose one:
MAT 2110 _____ (3) Techniques of Proof *(Pre: MAT 1120)*
MAT 2510 _____ (4) Sophomore Honors Seminar *(Pre: MAT 1120)*

B. Mathematics Courses for Concentration (29-30 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: ENG 2001, MAT 2110 or 2510; Co: 2240)*
MAT 3220 _____ (3) Intro to Real Analysis I **[WID]** *(Pre: ENG 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)*
~~STT 4250 _____ (3) Probability Modeling w/Applications *(Pre: MAT 1120)*~~
~~STT 4860 _____ (3) Probability Models & Statistical Inference I *(Pre: MAT 2130)*~~

Choose one:
MAT 4040 _____ (1) Mathematics Capstone **[CAP]** *(Pre:* MAT 3110 or 3220; *Sr. standing)*
MAT 4510 _____ (3) Senior Honors Thesis **[CAP]** *(Pre: MAT 3510; 3.45+ GPA in math)*

9-13 hours of approved electives** in mathematical sciences **to bring total hrs in AREA II to 65 hrs** (at least 6 hours at the 4000 level, at least 3 hours in MAT)

_____

C. A Career Support Concentration (at least 21 approved** hours)

_____ _____
_____ _____
_____ _____
_____ _____

** *Must be approved by mathematical sciences advisor*.

Student Signature: _____
Advisor Signature: _____
Chairperson Signature: _____
Date: _____ **Date Sent to Dean's Office:** _____

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**