I. Welcome

II. Approval of CUSA Minutes from November 25, 2014

III. Dean’s Office Update

IV. SAS Office Update

V. Subcommittee Chair Reports
   a. Curricular Changes/Degree Requirements
      1. Curricular Changes for Approval:
         NEW COURSES: COMS 608, GERM 130, HNDI 593, MATH 125, MATH 126, MATH 127, MATH 145, MATH 146, MATH 147, PHSX 202
         CHANGES: ASTR 391, BIOL 600, HIST 568, LA&S 150, MATH 220, MATH 221, MATH 290, MATH 291, MATH 320, MATH 409, MATH 410, MATH 470, MATH 500, MATH 526, MATH 530, MATH 540, MATH 542, MATH 558, MATH 559, MATH 590, MATH 591, MATH 601, MATH 605, MATH 624, MATH 627, MATH 646, MATH 647, MATH 648, MATH 650, MATH 660, PHSX 201, PHSX 201, PHSX 210, PHSX 211, PHSX 212, PHSX 213, PHSX 214, PHSX 521, PHSX 528, PHSX 531, PHSX 536, PHSX 623, SPLH 662/462, SPLH 663/463
         DELETIONS: N/A
      2. Degree Requirements for Approval:
         a. Changes to Existing Major to BA/BGS AND Minor – Speech-Language-Hearing
         b. Changes to Existing Major to BA Biology
         c. Changes to Existing Major to BA Human Biology
         d. Changes to Existing Major to BA Microbiology
         e. Changes to Existing Major to BS Biology (all subplans)
         f. Changes to Existing Major to BS Molecular Biosciences
         g. Changes to Existing BAS Biotechnology
         h. Changes to Existing Major BA/BGS Linguistics
         i. Changes to Existing Major to BA Astronomy and BS Astronomy
         j. Changes to Existing Major to BA Biology
         k. Changes to Existing Major to BS Biology – EEOB and MCDB and Teaching Biology
         l. Changes to Existing Major to BA Biochemistry and BS Biochemistry
         m. Changes to Existing Major to BA Microbiology and BS Microbiology
         n. Changes to Existing Major to BA Human Biology
         o. Changes to Existing Major to BS Molecular Biosciences
         p. Changes to BAS – Biotechnology
         q. Changes to Existing Major to BA Physics and BS Physics
         r. Changes to Existing Minor to Astrobiology
         s. Changes to Minor in Atmospheric Science

Old Business:
   a. Changes to Existing Major to BS Geography (PHSX 202 related)
   b. Changes to Existing to BS Atmospheric Science AND Atmospheric Science Minor (PHSX 202 related)
3. KU Core Proposals
   a. EALC 330/530 – GOAL 4, Learning Outcome 2
   b. POLS 512 – GOAL 4, Learning Outcome 1

b. Academic Policies and Awards

I. Adjournment
The committee met on Tuesday, November 25, 2014, at 11:15 a.m. in Room 210 Strong Hall. The following were present: Bayer, Bradley, Brumfield, Garibotto, Goldstein, Hilding, Kelly, Ledom, Morris, Persley, Rockey, Rufledt, Spreckelmeyer, Stock, Timm
Guest: J. Johnson

**Chair’s Welcome:** Dr. Rufledt called the meeting to order.

**Approval of CUSA Minutes:** A motion was made to approve the November 11, 2014 meeting minutes of the Committee on Undergraduate Studies & Advising. The motion was seconded and passed.

**Dean’s Office Update:** Dr. Goldstein reported the CLAS Advisory Board meeting was held last weekend. One of the topics discussed were dual degree opportunities for our students and their support of these ongoing efforts.

Dr. Goldstein also discussed the Provost’s course re-design initiative. One of the many proposals mentioned in the report to the Provost was the extension of the teaching post-doc program that began in the College. It is the intention to put out the RFP for the College at least one more time as a part of the pilot. The Provost has asked that we target programs that have high DFW rates. The report also focused on the need for the right facilities to do course re-design which would involve technology, furniture, updated classrooms, etc. There has been much discussion regarding our facilities and potentially significant remodeling projects. We are currently in the process of designing new classrooms in the Earth, Energy and Environment Center to create more engaged learning centers for our students.

**SAS Office Update:** Ms. Ledom reminded the CUSA members that the fall 2014 graduation ceremony will be held Sunday, December 14 at 2:00 p.m. at the Lied Center with just under 200 students attending this graduation ceremony.

Departments should be mid-way through their catalog editing for next year. December 10th is the official date to have all edits completed and sent back. Please let Ms. Ledom know if your departments are having any problems meeting the deadline date.

**Subcommittee Assignments:**

a. Curricular Changes/Degree Requirements/KU Core Proposals

1. **Curricular Changes Approved**

   Professor Hilding presented the Curricular Changes nominations. A motion was made to approve the Curricular Changes. The motion was seconded and passed unanimously with minor grammatical corrections.


   CHANGES: COMS 132, COMS 133, HA 150, HA 151, HA 160, HA 161, HA 265/165, HA 266/166, HA 267/367, HA 268/368, HA 269/369, HA 467, HA 468, HA 469, HA 482/586, HA 488, HA 503/554, HA 548, HA 588

   DELETIONS: HA 369

2. **Degree Requirements for Approval**

   Professor Hilding presented the Degree Requirements nominations. A motion was made to approve the Degree Requirement. The motion was seconded and passed unanimously with one minor grammatical correction.

   a. Changes to Existing Major to BS Geology – Geophysics option
b. Changes to Existing Major to BS Geology – Earth & Space Science Licensure

c. Changes to Existing Major to BS Geology – General Geology

d. Changes to Existing Major to BS Geology – Environmental Geology

e. Changes to Existing Major to BS Geology – Engineering Geology

f. Changes to Existing Major to BA & BGS History of Art

g. Changes to Existing requirements for Departmental Honors in History of Art

h. Changes to Existing Major to BFA History of Art

**Old Degree Requirements Business:**

Old Degree Requirements are tabled awaiting additional information from department.

a. Changes to Existing Major to BS Geography (PHSX 202 related)

b. Changes to Existing to BS Atmospheric Science AND Atmospheric Science Minor (PHSX 202 related)

3. **KU Core Proposals**

Professor Hilding presented the KU Core Proposal nomination. A motion was made to approve KU Core Proposal. The motion was made, seconded and passed with one vote to abstain.

c. POLS 685 – GOAL 5.1

4. **Old Business:**

Professor Hilding presented the following proposal. A motion was made to approve the ANTH 462 proposal. The motion was made, seconded and passed with two votes to abstain.

Proposal to consider ANTH 462 as a lab/field experience course for the BA Degree Specific Requirements.

**ADDITIONAL RATIONALE:**

Course syllabus is still in development.

The course teaches undergrads how to conduct fieldwork as cultural anthropologists, so it will teach a number of different ethnographic methods, all informed by professional ethics. We are working to identify a service learning component through which the students will be able to apply the skills as they learn them. It's very much a hands-on, in-the-field course with lectures/discussions twice weekly.

b. **Academic Policies and Awards**

Professor Bayer reported that Professor Paul Atchley attending their subcommittee meeting last week for a discussion on certificates and on-line certificates specifically. The subcommittee reviewed the first draft of the university-wide certificate proposal. There were several questions and concerns the group felt needed to be addressed related to the university-wide certificate proposal. A meeting has been scheduled for next week with Lucy Russell and John Augusto to discuss concerns with them.

The subcommittee had initial discussions on Dean’s Charge #2:

*Modify appropriately and develop implementation plan for the Dean’s Student Advisory Council’s proposal calling for syllabus standards across departments, and standardize grading scales in courses numbered 299 and lower. Solicit appropriate feedback from departments to build support and ensure effective implementation.*

This charged will be discussed at greater length in upcoming meetings. If anyone has input to share on this issue; please contact someone on the subcommittee with your thoughts and suggestions.

The subcommittee is also looking at the retroactive withdrawal petition process and the process for students who are applying for a special major.

Adjournment 11:49 pm
a. Curricular Changes/Degree Requirements

1. Curricular Changes for Approval/Motion to File

ASTRONOMY

CHANGE: PREREQUISITE
ASTR 391 PHYSICAL ASTRONOMY, HONORS N
(OLD) An honors, calculus-based introduction to astronomy and astrophysics, required for astronomy majors. Components of the Universe - from planetary systems, stellar systems, large scale structure and cosmology - are examined to illuminate the physics principles which govern their evolution. Prerequisite: MATH 121, and either permission of instructor, or participation in the University Honors Program. LEC.

ASTR 391 PHYSICAL ASTRONOMY, HONORS
(NEW) An honors, calculus-based introduction to astronomy and astrophysics, required for astronomy majors. Components of the Universe - from planetary systems, stellar systems, large scale structure and cosmology - are examined to illuminate the physics principles which govern their evolution. Prerequisite: MATH 125, and either permission of instructor, or participation in the University Honors Program. LEC.

BIOLOGY

CHANGE: CREDIT
BIOL 600 INTRODUCTORY BIOCHEMISTRY, LECTURES 4 N
(OLD) Designed to offer the essentials of the chemistry of the constituents of living organisms and the changes these constituents undergo (during life processes) in the human body and other living forms. Prerequisite: BIOL 150 or BIOL 151 and one semester of organic chemistry.

BIOL 600 INTRODUCTORY BIOCHEMISTRY, LECTURES 3 N
(NEW) Designed to offer the essentials of the chemistry of the constituents of living organisms and the changes these constituents undergo (during life processes) in the human body and other living forms. Prerequisite: BIOL 150 or BIOL 151 and one semester of organic chemistry.
Satisfies: N Natural Science (N)

COMMUNICATION STUDIES

CHANGE: NEW COURSE
COMS 608 COMMUNICATION, MEDIA & TERRORISM 3 S
The course considers the topics of media and terrorism from a macro public opinion and politics perspective. This course addresses the nature of terrorism, who terrorists are, and what are their grievances with the larger society in which they are embedded. Terrorism has unique links to communication and these will be explored in various ways: consideration of acts of terror, recruiting new terrorists, and issues in choosing effective and ineffective means of fighting terrorism. Additional topics include media portrayals of terrorism in news discourse and mediated communication such as motion pictures and televised dramatic portrayals. Prerequisite: COMS 130

GERMAN

CHANGE: NEW COURSE
GERM 130 GERMAN-SPEAKING EUROPE AND THE GERMAN-SPEAKING EUROPEANS 3 H
A survey of contemporary German-speaking Europe that covers topics such as geography, the environment, technology, the arts, music, film, literature, politics, immigration, language, religion, customs. Focus on Germany, Austria, Switzerland, Belgium, Luxembourg, Liechtenstein. Taught in English. Does not count toward the German Studies major or minor.

HINDI
CHANGE: NEW COURSE
HNDI 593  DIRECTED STUDY IN HINDI CULTURE AND LITERATURE:_____ 1-3 H
This course is designed for students seeking proficiency in Hindi beyond HNDI 320. Instructor will direct the student through readings and materials in Hindi that will add to the students substantive knowledge of India and culture in the Hindi language. May be taken multiple semesters for credit with varying content. Prerequisite: HNDI 320, and consent of instructor.

HISTORY
CHANGE: TITLE
HIST 568  THE RISE AND FALL OF THE SOVIET UNION, 1917 TO THE PRESENT  3 H W
OLD) An exploration of the Soviet Union's creation, evolution, collapse, and legacy in contemporary Russia and Eurasia. Drawing on historical scholarship, literature, music, and film, the course examines the major trends and developments in Soviet politics, ideology, society, economy, and culture. Special attention is paid to how the multiethnic Soviet state's rise and fall reflected broader changes in the world during the "Soviet century". LEC.

HIST 568  RISE & FALL OF THE SOVIET UNION  3 H W
(NEW) An exploration of the Soviet Union's creation, evolution, collapse, and legacy in contemporary Russia and Eurasia. Drawing on historical scholarship, literature, music, and film, the course examines the major trends and developments in Soviet politics, ideology, society, economy, and culture. Special attention is paid to how the multiethnic Soviet state's rise and fall reflected broader changes in the world during the "Soviet century". LEC.

LIBERAL ARTS & SCIENCES
CHANGE: COURSE DESCRIPTION  PREREQUISITE
LA&S 150  ACADEMIC SUCCESS SEMINAR  1 U
(OLD) This course provides students with the skills and resources necessary to improve their approach to their academic career. Topics covered include: utilization of campus resources; time management; test preparation and anxiety; reading comprehension; procrastination; and memory and concentration. Prerequisite: Eligible students must be on academic probation or consent of instructor.

LA&S 150  ACADEMIC SUCCESS SEMINAR  1 U
(NEW) This course provides students with the skills and resources necessary to improve their approach to their academic career. It is designed to help enhance students' time management and study skills as well as facilitate a connection with student success resources. Students and instructors work together in an interactive learning environment to create an academic foundation for success. Additional topics covered include: test preparation and anxiety; reading comprehension; procrastination; and memory and concentration. Recommended for students with less than a 2.5 GPA.

MATH
CHANGE: NEW COURSE
MATH 125  CALCULUS I  4 N
Limits, continuity and derivatives of algebraic, trigonometric, exponential and logarithmic functions. Curve sketching, optimization and other applications of the derivative.
Antiderivatives, Riemann sums, the definite integral, and the fundamental theorem of calculus. Open for only 1 hour credit to students with credit in MATH 115. Not open for credit to students with credit in MATH 116, 121, 141, or 145. Prerequisite: MATH 103 or MATH 104, with a grade of C- or higher; or 3 years of college preparatory mathematics including trigonometry, with a score of 28 or higher on the ACT Mathematics exam.

CHANGE: NEW COURSE
MATH 126  CALCULUS II  4 N
Techniques of integration, including integration by parts. Applications of integration, including volume, arc length, work and average value. Infinite sequences and series and Taylor series. Polar coordinates, vectors and the geometry of space.
Open for only 2 hours credit to students with credit in MATH 116.
Not open for credit to students with credit in MATH 122, 142 or 146.
Prerequisite: MATH 116, 121, 125, 141 or 145, with a grade of C- or higher.

CHANGE: NEW COURSE
MATH 127 CALCULUS III  4  N
Multivariable functions, partial derivatives and their applications, multiple integrals and their applications. Vector-valued functions, line and surface integrals, Green, Gauss and Stokes Theorems.
Open for only 2 hours credit to students with credit in MATH 122 or 142.
Not open for credit to students with credit in MATH 147, 223 or 243.
Prerequisite: MATH 126 or 146, with a grade of C- or higher.

CHANGE: NEW COURSE
MATH 145 CALCULUS I, HONORS  4  N
Limits, continuity and derivatives of algebraic, trigonometric, exponential and logarithmic functions. Curve sketching, optimization and other applications of the derivative. Antiderivatives, Riemann sums, the definite integral, and the fundamental theorem of calculus.
Not open for credit to students with credit in MATH 116, 121, 125 or 141. Prerequisite: An ACT Math score of 34 or higher, or membership in the University Honors Program and an ACT Math score of 32 or higher.

CHANGE: NEW COURSE
MATH 146 CALCULUS II, HONORS  4  N
Techniques of integration, including integration by parts. Applications of integration, including volume, arc length, work and average value. Infinite sequences and series and Taylor series. Polar coordinates, vectors and the geometry of space.
Open for only 2 hours credit to students with credit in MATH 116.
Not open for credit to students with credit in MATH 122, 126 or 142. Prerequisite: MATH 121, 125, 141 or 145, with a grade of C- or higher; and invitation of the Department of Mathematics.

CHANGE: NEW COURSE
MATH 147 CALCULUS III, HONORS  4  N
Multivariable functions, partial derivatives and their applications, multiple integrals and their applications. Vector-valued functions, line and surface integrals, Green, Gauss and Stokes Theorems.
Open for only 2 hours credit to students with credit in MATH 122 or 142.
Not open for credit to students with credit in MATH 127, 223 or 243.
Prerequisite: MATH 126 or 146, with a grade of C- or higher; and invitation of the Department of Mathematics.

CHANGE: PREREQUISITE
MATH 220 APPLIED DIFFERENTIAL EQUATIONS  3  N
Linear ordinary differential equations, Laplace transforms, systems of equations, and applications.
Not open to those who have taken MATH 320. Prerequisite: MATH 122 or MATH 142 or equivalent. LEC.

MATH 220 APPLIED DIFFERENTIAL EQUATIONS  3  N
Linear ordinary differential equations, Laplace transforms, systems of equations, and applications.
Not open to those who have taken MATH 320. Prerequisite: MATH 122 or MATH 142, or MATH 126 or MATH 146 with grade of C- or higher; previous or concurrent enrollment in MATH 290 or MATH 291 recommended. LEC.

CHANGE: PREREQUISITE
MATH 221 APPLIED DIFFERENTIAL EQUATIONS, HONORS  3  N
Linear Ordinary Differential Equations, Laplace Transforms, Systems of Equations, Enrichment Applications. Prerequisite: Math 122 or Math 142 or equivalent, and invitation from the Department of Mathematics. Not open to students with credit in Math 320. LEC.

MATH 221 APPLIED DIFFERENTIAL EQUATIONS, HONORS  3  N
Linear Ordinary Differential Equations, Laplace Transforms, Systems of Equations, Enrichment Applications. Prerequisite: Linear Ordinary Differential Equations, Laplace Transforms, Systems of Equations, Enrichment Applications. Prerequisite: Math 122 or Math 142, or MATH 126 or MATH 146 with grade of C- or higher, and invitation from the Department of Mathematics; previous or concurrent enrollment in MATH 290 or 291 recommended. Not open to students with credit in Math 320. LEC.

CHANGE: PREREQUISITE
MATH 290 ELEMENTARY LINEAR ALGEBRA 2 N
(OLD) Systems of linear equations, matrices, vector spaces, linear transformations, and applications. Not open to those who have taken MATH 590. Prerequisite: MATH 122 or MATH 142 or equivalent. LEC.

MATH 290 ELEMENTARY LINEAR ALGEBRA 2 N
(NEW) Systems of linear equations, matrices, vector spaces, linear transformations, and applications. Not open to those who have taken MATH 590. Prerequisite: MATH 122 or MATH 142, or MATH 126 or MATH 146 with grade of C- or higher. LEC.

CHANGE: PREREQUISITE
MATH 291 ELEMENTARY LINEAR ALGEBRA, HONORS 2 N
(OLD) Systems of Linear Equations, Matrices, Vector Spaces, Linear Transformations, Enrichment Applications. Prerequisite: Math 122 or Math 142 or equivalent, and invitation from the Department of Mathematics. Not open to students who have taken MATH 590. LEC.

MATH 291 ELEMENTARY LINEAR ALGEBRA, HONORS 2 N
(NEW) Systems of Linear Equations, Matrices, Vector Spaces, Linear Transformations, Enrichment Applications. Prerequisite: Math 122 or Math 142, or MATH 126 or MATH 146 with a grade of C- or higher, and invitation from the Department of Mathematics. Not open to students who have taken MATH 590. LEC.

CHANGE: PREREQUISITE
MATH 320 ELEMENTARY DIFFERENTIAL EQUATIONS 3 N
(OLD) Linear ordinary differential equations, series solutions. Laplace transforms. Systems of equations. Not open to those who have taken MATH 220. Prerequisite: MATH 223 and MATH 290, or MATH 143. LEC.

MATH 320 ELEMENTARY DIFFERENTIAL EQUATIONS 3 N
(NEW) Linear ordinary differential equations, series solutions. Laplace transforms. Systems of equations. Not open to those who have taken MATH 220. Prerequisite: MATH 223 or MATH 243, or MATH 127 or MATH 147 with a grade of C- or higher, and MATH 290 or MATH 291. LEC.

CHANGE: PREREQUISITE
MATH 409 TOPICS IN GEOMETRY FOR SECONDARY AND MIDDLE SCHOOL TEACHERS 2 N
(OLD) Study of selected topics from Euclidean, non-Euclidean, and transformation geometry chosen to give breadth to the mathematical background of secondary and middle school teachers. May not be counted for junior-senior credit towards a major in mathematics. Prerequisite: MATH 122. Students enrolled in MATH 409 must concurrently enroll in MATH 410. LEC.

MATH 409 TOPICS IN GEOMETRY FOR SECONDARY AND MIDDLE SCHOOL TEACHERS 2 N
(NEW) Study of selected topics from Euclidean, non-Euclidean, and transformation geometry chosen to give breadth to the mathematical background of secondary and middle school teachers. May not be counted for junior-senior credit towards a major in mathematics. Prerequisite: MATH 122 or MATH 126 or MATH 142 or MATH 146. Students enrolled in MATH 409 must concurrently enroll in MATH 410. LEC.

CHANGE: PREREQUISITE
MATH 410 TOPICS IN HISTORY OF MATHEMATICS FOR SECONDARY AND MIDDLE SCHOOL TEACHERS 1 N
(OLD) Study of selected topics from mathematical history chosen to provide students with knowledge of major historical developments in mathematics including individual contributions and contributions from different cultures. These topics will include a historical development of Euclidean and non-Euclidean geometry. May not be counted for junior-senior credit towards a major in mathematics.
Prerequisite: MATH 122. Students enrolled in MATH 410 must concurrently enroll in MATH 409. LEC.

**MATH 410 TOPICS IN HISTORY OF MATHEMATICS FOR SECONDARY AND MIDDLE SCHOOL TEACHERS**

(NEW) Study of selected topics from mathematical history chosen to provide students with knowledge of major historical developments in mathematics including individual contributions and contributions from different cultures. These topics will include a historical development of Euclidean and non-Euclidean geometry. May not be counted for junior-senior credit towards a major in mathematics. Prerequisite: MATH 122 or MATH 126 or MATH 142 or MATH 146. Students enrolled in MATH 410 must concurrently enroll in MATH 409. LEC.

**CHANGE: PREREQUISITE**

**MATH 470 PROBLEM SOLVING**

(OLD) An introduction to the general methods of solving mathematical problems. Particular techniques such as specialization, generalization, contradiction, and induction will be presented. Topics presented may vary from semester to semester. Prerequisite: MATH 122 or equivalent or concurrent enrollment in MATH 122. LEC.

(NEW) An introduction to the general methods of solving mathematical problems. Particular techniques such as specialization, generalization, contradiction, and induction will be presented. Topics presented may vary from semester to semester. Prerequisite: MATH 122 or equivalent or concurrent enrollment in MATH 122 or MATH 127 or MATH 142 or MATH 147 or concurrent enrollment in MATH 127 or MATH 147. LEC.

**CHANGE: PREREQUISITE**

**MATH 500 INTERMEDIATE ANALYSIS**

(OLD) A careful formulation of convergence and limits of sequences and functions; continuity and properties of continuous functions; differentiation; the Riemann integral; mean-value theorems and the fundamental theorem of calculus. Not open to students with credit in MATH 765. Prerequisite: MATH 223 and MATH 290, or MATH 143. LEC. Prerequisite:

(NEW) A careful formulation of convergence and limits of sequences and functions; continuity and properties of continuous functions; differentiation; the Riemann integral; mean-value theorems and the fundamental theorem of calculus. Not open to students with credit in MATH 765. Prerequisite: MATH 127 or MATH 147 or MATH 223 or MATH 243, and MATH 290 or MATH 291. LEC.

**CHANGE: PREREQUISITE**

**MATH 526 APPLIED MATHEMATICAL STATISTICS I**

(OLD) A first course in statistics for students with the techniques of calculus at their disposal. The following topics are studied with illustrations and problems drawn from various fields of applications: basic notions of probability and probability distributions; classical estimation and testing procedures for one and two sample problems; chi-square test. Not open to those with credit in MATH 628 or DSCI 301. Prerequisite: MATH 122 or MATH 116. LEC.

(NEW) A first course in statistics for students with the techniques of calculus at their disposal. The following topics are studied with illustrations and problems drawn from various fields of applications: basic notions of probability and probability distributions; classical estimation and testing procedures for one and two sample problems; chi-square test. Not open to those with credit in MATH 628 or DSCI 301. Prerequisite: MATH 122 or MATH 127 or MATH 142 or MATH 147 or MATH 116 (MATH 127 or MATH 147 recommended). LEC.

**CHANGE: PREREQUISITE**

**MATH 530 MATHEMATICAL MODELS**

(OLD) An introduction to mathematical models useful in a large variety of scientific and technical endeavors. Topics include: model construction, Markov chain models, models for linear optimization, graphs as models, and game theory. Prerequisite: MATH 223 and MATH 290, or MATH 143. LEC. An introduction to mathematical models useful in a large variety of scientific and technical endeavors. Topics include: model construction, Markov chain models, models for
linear optimization, graphs as models, and game theory. Prerequisite: MATH 223 and MATH 290, or MATH 143. LEC.

MATH 530 MATHEMATICAL MODELS 3 N
An introduction to mathematical models useful in a large variety of scientific and technical endeavors. Topics include: model construction, Markov chain models, models for linear optimization, graphs as models, and game theory. Prerequisite: MATH 127 or MATH 147 or MATH 223 or MATH 243, and MATH 290 or MATH 291. LEC.

CHANGE: PREREQUISITE
MATH 540 ELEMENTARY NUMBER THEORY 3 N
Divisibility, primes and their distribution, the Euclidean algorithm, perfect numbers, Fermat's theorem, Diophantine equations, applications to cryptography. Prerequisite: MATH 122 or consent of instructor. LEC.

MATH 540 ELEMENTARY NUMBER THEORY 3 N
Divisibility, primes and their distribution, the Euclidean algorithm, perfect numbers, Fermat's theorem, Diophantine equations, applications to cryptography. Prerequisite: MATH 122 or MATH 127 or MATH 147. LEC.

CHANGE: PREREQUISITE
MATH 542 VECTOR ANALYSIS 2 N
Vector algebra; vector and scalar fields; line and surface integrals; theorems of Gauss, Green, and Stokes. Curvilinear coordinates. Applications. Introduction to tensor analysis. Not open to those with credit in MATH 143. Prerequisite: MATH 223 and MATH 290. LEC.

MATH 542 VECTOR ANALYSIS 2 N
Vector algebra; vector and scalar fields; line and surface integrals; theorems of Gauss, Green, and Stokes. Curvilinear coordinates. Applications. Introduction to tensor analysis. Not open to those with credit in MATH 143. Prerequisite: MATH 127 or MATH 147 or MATH 223 or MATH 243, and MATH 290 or MATH 291. LEC.

CHANGE: PREREQUISITE
MATH 558 INTRODUCTORY MODERN ALGEBRA 3 N
Development of the number systems. Polynomials. Introduction to abstract number systems such as groups and fields. Not open to students with credit in MATH 791. Prerequisite: MATH 290. LEC.

MATH 558 INTRODUCTORY MODERN ALGEBRA 3 N
Development of the number systems. Polynomials. Introduction to abstract number systems such as groups and fields. Not open to students with credit in MATH 791. Prerequisite: MATH 290 or MATH 291. LEC.

CHANGE: PREREQUISITE
MATH 559 MODERN GEOMETRIES 3 N
Selected topics in Euclidean geometry. Synthetic and analytic projective geometry; duality, Desargues' theorem, perspectives, conics. Non-Euclidean and metric projective geometries. Prerequisite: MATH 122. LEC.

MATH 559 MODERN GEOMETRIES 3 N
Selected topics in Euclidean geometry. Synthetic and analytic projective geometry; duality, Desargues' theorem, perspectives, conics. Non-Euclidean and metric projective geometries. Prerequisite: MATH 122 or MATH 127 or MATH 142 or MATH 147. LEC.

CHANGE: PREREQUISITE
MATH 590 LINEAR ALGEBRA 3 N
Vector spaces, linear transformations, and matrices. Canonical forms, Determinants. Hermitian, unitary and normal transformations. Not open to students with credit in MATH 792. Prerequisite: MATH 223 and MATH 290 or equivalent, or MATH 143. LEC.

MATH 590 LINEAR ALGEBRA 3 N
Vector spaces, linear transformations, and matrices. Canonical forms, Determinants. Hermitian, unitary and normal transformations. Not open to students with credit in MATH 792. Prerequisite: MATH 127 or MATH 147 or MATH 223 or MATH 243, and MATH 290 or MATH 291. LEC.
CHANGE: PREREQUISITE
MATH 591  APPLIED NUMERICAL LINEAR ALGEBRA  3  N
(OLD) An introduction to numerical linear algebra. Possible topics include: applied canonical forms,
matrix factorizations, perturbation theory, systems of linear equations, linear least squares,
singular value decomposition, algebraic eigenvalue problems, matrix functions, and the use of
computational software. Not open to students with credit in MATH 780 or MATH 782.
Prerequisite: MATH 290. Recommended: EECS 138 or equivalent experience. LEC.

MATH 591  APPLIED NUMERICAL LINEAR ALGEBRA  3  N
(NEW) An introduction to numerical linear algebra. Possible topics include: applied canonical forms,
matrix factorizations, perturbation theory, systems of linear equations, linear least squares,
singular value decomposition, algebraic eigenvalue problems, matrix functions, and the use of
computational software. Not open to students with credit in MATH 780 or MATH 782.
Prerequisite: MATH 290 or MATH 291. EECS 138 or equivalent recommended. LEC.

CHANGE: PREREQUISITE
MATH 601  ALGEBRAIC CODING THEORY  3  N
(OLD) An introduction to error correcting codes. Included are: linear codes, cyclic codes, BCH codes,
and convolutional codes. Prerequisite: MATH 290. LEC.

MATH 601  ALGEBRAIC CODING THEORY  3  N
(NEW) An introduction to error correcting codes. Included are: linear codes, cyclic codes, BCH codes,
and convolutional codes. Prerequisite: MATH 290 or MATH 291. LEC.

CHANGE: PREREQUISITE
MATH 605  APPLIED REGRESSION ANALYSIS  3  N
(OLD) The matrix approach to regression. Weighted least squares, transformations, examination of
residuals, model selection, and analysis of variance. Prerequisite: One calculus-based statistics
course. LEC.

MATH 605  APPLIED REGRESSION ANALYSIS  3  N
(NEW) The matrix approach to regression. Weighted least squares, transformations, examination of
residuals, model selection, and analysis of variance. Prerequisite: MATH 290 or MATH 291, and
MATH 526 or MATH 628. LEC.

CHANGE: PREREQUISITE
MATH 624  DISCRETE PROBABILITY  3  N
(OLD) Theory and applications of discrete probability models. Elementary combinatorial analysis, random
walks, urn models, occupancy problems, and the binomial and Poisson distributions. Prerequisite:
MATH 223 and MATH 290, or MATH 143. LEC.

MATH 624  DISCRETE PROBABILITY  3  N
(NEW) Theory and applications of discrete probability models. Elementary combinatorial analysis, random
walks, urn models, occupancy problems, and the binomial and Poisson distributions. Prerequisite:
MATH 127 or MATH 147 or MATH 223 or MATH 243, and MATH 290 or MATH 291. LEC.

CHANGE: PREREQUISITE
MATH 627  PROBABILITY  3  N
(OLD) Introduction to mathematical probability; combinatorial analysis; the binomial, Poisson, and
normal distributions; limit theorems; laws of large numbers. Prerequisite: MATH 223 and MATH
290 or equivalent, or MATH 143. LEC.

MATH 627  PROBABILITY  3  N
(NEW) Introduction to mathematical probability; combinatorial analysis; the binomial, Poisson, and
normal distributions; limit theorems; laws of large numbers. Prerequisite: MATH 127 or MATH
147 or MATH 223 or MATH 243, and MATH 290 or MATH 291. LEC.

CHANGE: PREREQUISITE
MATH 646  COMPLEX VARIABLE AND APPLICATIONS  3  N
(OLD) Analytic functions of a complex variable, infinite series in the complex plane, theory of residues,
conformal mapping and applications. Prerequisite: MATH 223. LEC.

MATH 646  COMPLEX VARIABLE AND APPLICATIONS  3  N
Analytic functions of a complex variable, infinite series in the complex plane, theory of residues, conformal mapping and applications. Prerequisite: MATH 127 or MATH 147 or MATH 223 or MATH 243. LEC.

CHANGE: PREREQUISITE
MATH 647 APPLIED PARTIAL DIFFERENTIAL EQUATIONS 3 N
Boundary value problems; topics on partial differentiation; theory of characteristic curves; partial differential equations of mathematical physics. Prerequisite: MATH 220, MATH 223 and MATH 290; or MATH 320. LEC.

MATH 647 APPLIED PARTIAL DIFFERENTIAL EQUATIONS 3 N
Boundary value problems; topics on partial differentiation; theory of characteristic curves; partial differential equations of mathematical physics. Prerequisite: MATH 127 or MATH 147 or MATH 223 or MATH 243, and MATH 220 or MATH 221 or MATH 320. LEC.

CHANGE: PREREQUISITE
MATH 648 CALCULUS OF VARIATIONS AND INTEGRAL EQUATIONS 3 N
Topics in the calculus of variations, integral equations, and applications. Prerequisite: MATH 220, MATH 223 and MATH 290; or MATH 320. LEC. Prerequisite:

MATH 648 CALCULUS OF VARIATIONS AND INTEGRAL EQUATIONS 3 N
Topics in the calculus of variations, integral equations, and applications. Prerequisite: MATH 127 or MATH 147 or MATH 223 or MATH 243, and MATH 220 or MATH 221 or MATH 320. LEC.

CHANGE: PREREQUISITE
MATH 650 NONLINEAR DYNAMICAL SYSTEMS 3 N
This course provides an introduction to nonlinear ordinary differential equations and dynamical systems theory with an emphasis on applications. Topics covered include the existence and uniqueness of solutions to initial value problems, as well as the qualitative behavior of solutions, including existence of equilibria, periodic and connecting orbits and their stability. Additional topics include an introduction to bifurcation theory and chaos. Prerequisites: MATH 220 and MATH 290, or MATH 320, or equivalent. LEC.

MATH 650 NONLINEAR DYNAMICAL SYSTEMS 3 N
This course provides an introduction to nonlinear ordinary differential equations and dynamical systems theory with an emphasis on applications. Topics covered include the existence and uniqueness of solutions to initial value problems, as well as the qualitative behavior of solutions, including existence of equilibria, periodic and connecting orbits and their stability. Additional topics include an introduction to bifurcation theory and chaos. Prerequisites: MATH 122 or MATH 127 or MATH 142 or MATH 147, and MATH 220 or MATH 221 or MATH 320, and MATH 290 or MATH 291. LEC.

CHANGE: PREREQUISITE
MATH 660 GEOMETRY I 3 N
An introduction to modern geometry. Differential geometry of curves and surfaces, the topological classification of closed surfaces, dynamical systems, and knots and their polynomials. Other topics as time permits. Prerequisite: MATH 223 and MATH 290, or equivalent, or MATH 143. LEC.

MATH 660 GEOMETRY I 3 N
An introduction to modern geometry. Differential geometry of curves and surfaces, the topological classification of closed surfaces, dynamical systems, and knots and their polynomials. Other topics as time permits. Prerequisite: MATH 127 or MATH 147 or MATH 223 or MATH 243, and MATH 290 or MATH 291. LEC.

PHYSICS

CHANGE: PREREQUISITE
PHSX 201 Transition to General Physics
Classical mechanics and thermodynamics with calculus for students who have had a prior algebra-based course. Prerequisite: PHSX 114, either MATH 116 or 121, and permission of the department. LEC.

PHSX 201 Transition to General Physics
(NEW) Classical mechanics and thermodynamics with calculus for students who have had a prior algebra-based course. Prerequisite: PHSX 114, either MATH 116 or 125; co-requisite MATH 126; and permission of the department. LEC.

**CHANGE: NEW COURSE**

**PHSX 202** TRANSITION TO GENERAL PHYSICS II 1 N
Electricity and magnetism with calculus for students who have had a prior algebra-based course. Prerequisites: PHSX 115 and permission of the department. Corequisite: MATH 122. LEC

**CHANGE: PREREQUISITE**

**PHSX 210 General Physics I for Engineers GE11 N**
Introduction to classical mechanics and thermodynamics designed for students in the School of Engineering. Students not admitted to the School of Engineering must receive permission from instructor. PHSX 210 and PHSX 211 cannot both be taken for credit. Students with credit in PHSX 114 can obtain only one hour of credit. Prerequisite: MATH 121 with a grade of C or better; courses in high school physics and/or chemistry recommended. LEC.

**PHSX 210 General Physics I for Engineers GE11 N**
Introduction to classical mechanics and thermodynamics designed for students in the School of Engineering who have completed MATH 125 with a grade of C or better. Students not admitted to the School of Engineering must receive permission from instructor. PHSX 210 and PHSX 211 cannot both be taken for credit. Students with credit in PHSX 114 can obtain only one hour of credit. Prerequisite: MATH 125 with a grade of C or better; co-requisite MATH 126; courses in high school physics and/or chemistry recommended. LEC.

**CHANGE: PREREQUISITE**

**PHSX 211 General Physics I NP**
Introduction to classical mechanics and thermodynamics. Designed for students in engineering and physical science majors. In special circumstances, permission to enroll for fewer than four hours credit may be obtained from the department. Students with credit in PHSX 114 can obtain only one hour of credit. Prerequisite: MATH 116 or MATH 121; courses in high school physics and/or chemistry are recommended. LEC.

**PHSX 211 General Physics I NP**
Introduction to classical mechanics and thermodynamics. Designed for students in engineering and physical science majors. In special circumstances, permission to enroll for fewer than four hours credit may be obtained from the department. Students with credit in PHSX 114 can obtain only one hour of credit. Prerequisite: MATH 116 or MATH 125; co-requisite MATH 126; courses in high school physics and/or chemistry are recommended. LEC.

**CHANGE: PREREQUISITE**

**PHSX 212 General Physics II G3N N**
Study of electricity and magnetism, waves and sound. In special circumstances, permission to enroll for fewer than three hours credit may be obtained from the department. Students with credit in PHSX 115 can obtain only one hour of credit. Prerequisite: PHSX 211, PHSX 210 or PHSX 213. Corequisite: MATH 122. LEC.

**PHSX 212 General Physics II G3N N**
Study of electricity and magnetism, waves and sound. In special circumstances, permission to enroll for fewer than three hours credit may be obtained from the department. Students with credit in PHSX 115 can obtain only one hour of credit. Prerequisite: PHSX 211, PHSX 210 or PHSX 213. MATH 116 or MATH 125; Corequisite: MATH 126. LEC.

**CHANGE: PREREQUISITE**

**PHSX 213 General Physics I, Honors NP**
An honors section of PHSX 211 and PHSX 216. Credit for fewer than five hours requires permission of the department. Recommended for students with a strong math background who are either in the University Honors Program or intending to major in a physical science. Courses in high school physics and chemistry are strongly recommended. Prerequisite: MATH 121 and permission of instructor. LEC.
PHSX 213  General Physics I, Honors  NP
(NEW) An honors section of PHSX 211 and PHSX 216. Credit for fewer than five hours requires permission of the department. Recommended for students with a strong math background who are either in the University Honors Program or intending to major in a physical science. Courses in high school physics and chemistry are strongly recommended. Prerequisite: MATH 125; co-requisite MATH 126; and permission of instructor. LEC.

CHANGE: PREREQUISITE

PHSX 214  General Physics II, Honors  N
(OLD) An honors section of PHSX 212 and PHSX 236. Credit for fewer than four hours requires permission of the department. Recommended for students with a strong math background who are either in the University Honors Program or intending to major in a physical science. Prerequisite: PHSX 216 together with either PHSX 211 or PHSX 210; or PHSX 213, and permission of instructor. Corequisite: MATH 122. LEC.

PHSX 214  General Physics II, Honors  N
(NEW) An honors section of PHSX 212 and PHSX 236. Credit for fewer than four hours requires permission of the department. Recommended for students with a strong math background who are either in the University Honors Program or intending to major in a physical science. Prerequisite: PHSX 216 together with either PHSX 211 or PHSX 210; or PHSX 213, and permission of instructor. Corequisite: MATH 127. LEC.

CHANGE: PREREQUISITE

PHSX 521  Mechanics
(OLD) Newton's laws of motion. Motions of a particle in one, two, and three dimensions. Motion of a system of particles. Moving coordinate systems. (Same as EPHX 521.) Prerequisite: PHSX 211 and PHSX 216, or PHSX 213; MATH 223; MATH 290; and MATH 220 or MATH 320. LEC.

PHSX 521  Mechanics
(NEW) Newton's laws of motion. Motions of a particle in one, two, and three dimensions. Motion of a system of particles. Moving coordinate systems. (Same as EPHX 521.) Prerequisite: PHSX 211 and PHSX 216, or PHSX 213; MATH 127; MATH 290; and MATH 220 or MATH 320. LEC.

CHANGE: PREREQUISITE

PHSX 528  Geodynamics and Plate Tectonics  N
(OLD) Study of physical processes in the solid Earth and of geophysical approaches to studying Earth systems at regional and global scales. Topics include global potential fields, thermal regime, rheology and Earth deformation, earthquakes and seismic structure, plate motions and global tectonics. (Same as GEOL 573) Prerequisite: An introductory course in geology; MATH 116 or MATH 122; and PHSX 115, PHSX 214, or PHSX 212 and PHSX 236. LEC.

PHSX 528  Geodynamics and Plate Tectonics
(NEW) Study of physical processes in the solid Earth and of geophysical approaches to studying Earth systems at regional and global scales. Topics include global potential fields, thermal regime, rheology and Earth deformation, earthquakes and seismic structure, plate motions and global tectonics. (Same as GEOL 573) Prerequisite: An introductory course in geology; MATH 116 or MATH 126; and PHSX 115, PHSX 214, or PHSX 212 and PHSX 236. LEC.

CHANGE: PREREQUISITE

PHSX 531  Electricity and Magnetism  N
(OLD) The properties of electric and magnetic fields, including electrostatics, Gauss' Law, boundary value methods, electric fields in matter, electromagnetic induction, magnetic fields in matter, the properties of electric and magnetic dipoles, and of dielectric and magnetic materials. (Same as EPHX 531.) Prerequisite: PHSX 214, or PHSX 212 and PHSX 236; PHSX 521 or special permission; MATH 223; MATH 290; and MATH 220 or MATH 320. LEC.

PHSX 531  Electricity and Magnetism  N
(NEW) The properties of electric and magnetic fields, including electrostatics, Gauss' Law, boundary value methods, electric fields in matter, electromagnetic induction, magnetic fields in matter, the properties of electric and magnetic dipoles, and of dielectric and magnetic materials. (Same as EPHX 531.) Prerequisite: PHSX 214, or PHSX 212 and PHSX 236; PHSX 521 or special permission; MATH 223;
MATH 290; and MATH 220 or MATH 320. LEC.

CHANGE: PREREQUISITE
PHSX 536  Electronic Measurement and Design N
(OLD) A laboratory course that explores the theory and experimental techniques of analog and digital electronic circuit design and measurements. Topics include transient response, transmission lines, transistors, operational amplifiers, and digital logic. (Same as EPHX 536.) Prerequisite: PHSX 214 or PHSX 212 and PHSX 236; MATH 223; and MATH 290. PHSX 313 and 316 recommended. LAB.

PHSX 536  Electronic Measurement and Design N
(NEW) A laboratory course that explores the theory and experimental techniques of analog and digital electronic circuit design and measurements. Topics include transient response, transmission lines, transistors, operational amplifiers, and digital logic. (Same as EPHX 536.) Prerequisite: PHSX 214 or PHSX 212 and PHSX 236; MATH 127; and MATH 290. PHSX 313 and 316 recommended. LAB.

CHANGE: PREREQUISITE
PHSX 623  Physics of Fluids N
(OLD) An introduction to basic fluid mechanics in which fundamental concepts and equations are covered. Topics include hydrostatics, hydrodynamics, wave propagation in fluids, and applications in the areas such as astrophysics, atmospheric physics, and geophysics. (Same as EPHX 623.) Prerequisite: MATH 223; MATH 290; PHSX 212 and PHSX 236 (or PHSX 214 can replace PHSX 212 and PHSX 236.) LEC.

PHSX 623  Physics of Fluids N
(NEW) An introduction to basic fluid mechanics in which fundamental concepts and equations are covered. Topics include hydrostatics, hydrodynamics, wave propagation in fluids, and applications in the areas such as astrophysics, atmospheric physics, and geophysics.

(Same as EPHX 623.) Prerequisite: MATH 223; MATH 290; PHSX 212 and PHSX 236 (or PHSX 214 can replace PHSX 212 and PHSX 236.) LEC.

CHANGE: PREREQUISITE  NUMBER
SPLH 662  PRINCIPLES OF SPEECH SCIENCE  3  N
(OLD) Survey of the physiology of speech production, and the physics of sound. Emphasis upon methodologies in the laboratory study of normal speech. Prerequisite: SPLH 120 and SPLH 320, or concurrent enrollment in SPLH 120 and SPLH 320, or consent of instructor.

SPLH 462  PRINCIPLES OF SPEECH SCIENCE  3  N
(NEW) Survey of the physiology of speech production, and the physics of sound. Emphasis upon methodologies in the laboratory study of normal speech. Prerequisite: SPLH 120, or concurrent enrollment in SPLH 120 or consent of instructor.

CHANGE: COURSE DESCRIPTION  PREREQUISITE  NUMBER
SPLH 663  PRINCIPLES OF HEARING SCIENCE  3  N
(OLD) Concepts and principles relevant to the normal hearing processes: gross anatomy, psychophysical methods, and basic subjective correlates of the auditory system. Prerequisites: SPLH 120 and SPLH 320, or concurrent enrollment in SPLH 120 and SPLH 320, or consent of instructor.

SPLH 463  PRINCIPLES OF HEARING SCIENCE  3  N
(NEW) This class discusses the concepts and principles relevant to normal hearing processing: anatomy, psychophysical methods, and basic subjective correlates of the auditory system. Prerequisites: SPLH 120, or concurrent enrollment in SPLH 120, or consent of instructor.
2. **Degree Requirements for Approval**

   a. **Changes to Existing Major to BA/BGS AND Minor – Speech-Language-Hearing**

**PROPOSAL**
We have submitted a request to change SPLH 662 to SPLH 462 and to change the prerequisites from SPLH 120 and 320 to just SPLH 120

**JUSTIFICATION**
We are requesting a change in numbering and prerequisites for SPLH 662 and 663. The requested numbers are SPLH 462 and 463 and the requested change in prerequisites is from SPLH 120 & 320 to only SPLH 120.

The change in numbering necessitates a change **to the major and minor also**. Renumbering SPLH 662 to SPLH 462 and SPLH 663 to 463 will acknowledge a new suggested course sequence for SPLH students in which they are encouraged to complete the SPLH “sciences” courses (Speech Science, Language Science and Hearing Science) prior to advanced courses at the 500 and 600 level.

**EFFECTIVE DATE**
F 2015

**First- and Second-Year Preparation**
Both the B.A. and the B.G.S. aspirant should fulfill the College general education requirements. Students also should complete SPLH 120, SPLH 261, SPLH 320, SPLH 465, SPLH 466, SPLH 663, SPLH 463, and elective courses in human physiology, psychology, and linguistics during their first 2 years. Faculty members can help students select appropriate course work.

**Requirements for the B.A. or B.G.S. Major**

Speech-Language-Hearing Prerequisite or Co-Requisite Requirements (0)
Majors must complete this requirement, however, these hours do not contribute to the minimum number of hours required for the major.

Mathematics. Satisfied by one of the following:
- **MATH 101** College Algebra
- **MATH 104** Precalculus Mathematics

Or upper-level placement

Statistics. An introductory statistics course (PSYC 210, MATH 365) is recommended.

Speech-Language-Hearing Introductory Knowledge (17)

**THE PHYSICS OF SPEECH**
Satisfied by:
- **SPLH 120** The Physics of Speech

**SURVEY COMMUNICATION DISORDERS**
Satisfied by:
- **SPLH 261** Survey of Communication Disorders

**THE COMMUNICATING BRAIN: THE ULTIMATE PERSONAL COMPUTER**
Satisfied by:
- **SPLH 320** The Communicating Brain: The Ultimate Personal Computer

**LANGUAGE SCIENCE**
Satisfied by:
- **SPLH 466** Language Science

**FUNDAMENTALS OF CLINICAL PHONETICS**
Satisfied by:
- **SPLH 465** Fundamentals of Clinical Phonetics

**PRINCIPLES OF HEARING SCIENCE**
Satisfied by:
- **SPLH 662-SPLH 463** Principles of Hearing Science

Speech-Language-Hearing Core Knowledge and Skills (18)
Majors must complete a course in the following areas:

**LANGUAGE SAMPLE ANALYSIS LABORATORY**
Satisfied by:
- **SPLH 565** Language Sample Analysis Lab

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Language Development. Satisfied by:  
SPLH 566 Language Development 3

Research Methods in Speech-Language-Hearing. Satisfied by:  
SPLH 660 Research Methods in Speech-Language-Hearing 3

Principles of Speech Science. Satisfied by:  
SPLH 662-SPLH 462 Principles of Speech Science 3

Introduction to Audiological Assessment & Rehabilitation. Satisfied by:  
SPLH 668 Introduction to Audiological Assessment and Rehabilitation 4

Introduction to Speech-Language Pathology. Satisfied by:  
SPLH 671 Introduction to Speech-Language Pathology 4

Further Speech-Language-Hearing Study (0)

After completing the requirements, students with grade-point averages of 3.0 or higher may enroll in any one of the following:  
SPLH 670 Beginning Clinical Practice in Audiology
SPLH 672 Clinical Practice in Speech-Language Pathology

Major Hours & Major GPA

While completing all required courses, majors must also meet each of the following hour and grade-point average minimum standards:

Major Hours
Satisfied by 35 hours of major courses.

Major Hours in Residence
Satisfied by a minimum of 15 hours of KU resident credit in the major.

Major Junior/Senior Hours
Satisfied by a minimum of 28 hours from junior/senior courses (300+) in the major.

Major Junior/Senior Graduation GPA
Satisfied by a minimum of a 2.0 KU GPA in junior/senior courses (300+) in the major. GPA calculations include all junior/senior courses in the field of study including F’s and repeated courses. See the Semester/Cumulative GPA Calculator.

Requirements for the Minor

Speech-Language-Hearing Minor Course Requirements (15)
Students selecting this minor must complete the following:
Survey Communication Disorders. Satisfied by:  
SPLH 261 Survey of Communication Disorders 3

Speech-Language-Hearing Required Electives. Satisfied by at least 4 SPLH courses (12 hours) from the following:
SPLH 120 The Physics of Speech
SPLH 320 The Communicating Brain: The Ultimate Personal Computer
SPLH 464 Undergraduate Seminar in: _____
SPLH 465 Fundamentals of Clinical Phonetics
SPLH 466 Language Science
SPLH 499 Directed Study in Speech-Language-Hearing
SPLH 565 Language Sample Analysis Lab
SPLH 566 Language Development
SPLH 660 Research Methods in Speech-Language-Hearing
SPLH 662-SPLH 462 Principles of Speech Science

SPLH 565 Language Sample Analysis Lab
SPLH 660 Research Methods in Speech-Language-Hearing
SPLH 662-SPLH 462 Principles of Speech Science
Courses with clinical content can be taken as directed study with the permission and support of a faculty mentor.

**Minor Hours & Minor GPA**

While completing all required courses, minors must also meet each of the following hour and grade-point average minimum standards:

**Minor Hours**
Satisfied by 18 hours of minor courses.

**Minor Hours in Residence**
Satisfied by a minimum of 9 junior/senior (300+) hours of KU resident credit in the minor.

**Minor Junior/Senior Hours**
Satisfied by a minimum of 12 hours from junior/senior courses (300+) in the minor.

b. **Changes to Existing Major to BA Biology**

**PROPOSAL**
The current B.A. Biology major requires, in part

**GENERAL BIOLOGY REQUIREMENTS (26-27 h) (in part)**
Two of the following five courses (6-7 h):
- BIOL 400/401 Fund Microbiology (3)
- BIOL 408 Physiology of Organisms (3)
- BIOL 416/536 Cell Structure and Function (3)
- BIOL 417 Biology of Development (3)
- BIOL 600 Introductory Biochemistry, Lectures (4)

We are changing the number of credit hours for BIOL 600 Introductory Biochemistry, Lectures from 4 credit hours to 3 credit hours.

The new requirements would read, in part:

**GENERAL BIOLOGY REQUIREMENTS (26-27 h) (26 h)**
Two of the following five courses (6-7 h) (6 h):
- BIOL 400/401 Fund Microbiology (3)
- BIOL 408 Physiology of Organisms (3)
- BIOL 416/536 Cell Structure and Function (3)
- BIOL 417 Biology of Development (3)
- **BIOL 600 Introductory Biochemistry, Lectures (4) (3)**

**JUSTIFICATION**
The number of credit hours for BIOL 600 Introductory Biochemistry, Lectures will be decreasing from 4 credit hours to 3 credit hours because of the elimination of course material that we have determined is redundant with material that is presented in other required courses.

**EFFECTIVE**
Fall 2015

c. **Changes to Existing Major to BA Human Biology**

**PROPOSAL**
Human Biology requirements in part:

**ANTHROPOLOGY CONCENTRATION/Human Anatomy & Physiology Category (12 h)**
- BIOL 417 Biology of Development (3) AND
- 9 h selected from the following: ANTH 542 Biology of Human Nutrition (4); ANTH 648 Human Osteology (4); ANTH 650 Human Reproduction: Biology & Behavior (3); BIOL 426 Lab in Cell Biology (3); BIOL 440 Advanced
Human Anatomy (lect & lab) (6); BIOL 600 Introd Biochemistry, Lectures (4); BIOL 637 Introd Biochemistry Lab (2); BIOL 646 Mammalian Physiology (4); BIOL 647 Mammalian Physiology Lab (2)

BIOLOGY CONCENTRATION/Anatomy and Physiology Category (10 h)
BIOL 646 Mammalian Physiology (4) AND
6 h selected from the following: ANTH 542 Biology Human Nutrition (4); ANTH 648 Human Osteology (4); BIOL 435 Introd Neurobiology (3); BIOL 440 Advanced Human Anatomy (lect & lab) (6); BIOL 600 Introd Biochemistry (4); BIOL 637 Introd Biochemistry Lab (2); BIOL 647 Mammalian Physiology Lab (2); HSES 672 Exercise Physiology (3); PSYC 370 Behavioral Neuroscience (3); PSYC 380 Clinical Neuroscience (3); PSYC 475 Cognitive Neuroscience (3)

We are changing the number of credit hours for BIOL 600 Introductory Biochemistry, Lectures from 4 credit hours to 3 credit hours.

The new requirements would read:
ANTHROPOLOGY CONCENTRATION/Human Anatomy & Physiology Category (12 h)
BIOL 417 Biology of Development (3) AND
9 h selected from the following: ANTH 542 Biology Human Nutrition (4); ANTH 648 Human Osteology (4); ANTH 650 Human Reproduction: Biology & Behavior (3); BIOL 426 Lab in Cell Biology (3); BIOL 440 Advanced Human Anatomy (lect & lab) (6); BIOL 600 Introductory Biochemistry, Lectures (4) (3); BIOL 637 Introd Biochemistry Lab (2); BIOL 646 Mammalian Physiology (4); BIOL 647 Mammalian Physiology Lab (2)

BIOLOGY CONCENTRATION/Anatomy and Physiology Category (10 h)
BIOL 646 Mammalian Physiology (4) AND
6 h selected from the following: ANTH 542 Biology Human Nutrition (4); ANTH 648 Human Osteology (4); BIOL 435 Introd Neurobiology (3); BIOL 440 Advanced Human Anatomy (lect & lab) (6); BIOL 600 Introductory Biochemistry, Lectures (4) (3); BIOL 637 Introd Biochemistry Lab (2); BIOL 646 Mammalian Physiology (4); BIOL 647 Mammalian Physiology Lab (2)

JUSTIFICATION
The number of credit hours for BIOL 600 Introductory Biochemistry, Lectures will be decreasing from 4 credit hours to 3 credit hours because of the elimination of course material that we have determined is redundant with material that is presented in other required courses.

EFFECTIVE
Fall 2015

d. Changes to Existing Major to BA Microbiology

PROPOSAL
The current B.A. Microbiology degree requires, in part, that students complete:

MICROBIOLOGY CORE REQUIREMENTS (9–10 h)
BIOL 400/401 Fundamentals Microbiology (3)    BIOL 599 Senior Seminar: Current Progress in Microbiology (1)
BIOL 402 Fund Microbiology Lab (2)    (must be taken Sr yr)
One of the following two courses (3–4 h):
BIOL 516 Microbial Physiology (3)
BIOL 600 Introductory Biochemistry, Lectures (4)

We are changing the number of credit hours for BIOL 600 Introductory Biochemistry, Lectures from 4 credit hours to 3 credit hours.

The new requirements would read:
MICROBIOLOGY CORE REQUIREMENTS (9–10 h) (9 h)
BIOL 400/401 Fundamentals Microbiology (3)           BIOL 599 Senior Seminar: Current Progress in
Microbiology (1)
BIOL 402 Fund Microbiology Lab (2)                  (must be taken Sr yr)
One of the following two courses (3–4 h) (3 h):
BIOL 516 Microbial Physiology (3)
BIOL 600 Introductory Biochemistry, Lectures (4) (3)

JUSTIFICATION

The number of credit hours for BIOL 600 Introductory Biochemistry, Lectures will be decreasing from 4 credit hours to 3 credit hours because of the elimination of course material that we have determined is redundant with material that is presented in other required courses.

EFFECTIVE
Fall 2015

e. Changes to Existing Major to BS Biology (all subplans)

PROPOSAL
The EEOB subplan for B.S. Biology requires in part:

GENERAL SCIENCE REQUIREMENTS (31–33 h)
BIOL 105 Biology Orientation Seminar (1)              BIOL 600 Introductory Biochemistry, Lectures (4)
CHEM 130 Foundations of Chemistry I (5)             MATH 121 Calculus I (5) OR MATH 115 & 116 Calculus I &
II (6)                                               II (6)
CHEM 135 Foundations of Chemistry II (5)            PHSX 114 & 115 College Physics I & II (8) OR
CHEM 310 Fund Organic Chemistry (3) OR              PHSX 211+216 & 212+236 Gen. Physics I & II (9)
CHEM 330 Organic Chemistry I (3)

We are changing the number of credit hours for BIOL 600 Introductory Biochemistry, Lectures from 4 credit hours to 3 credit hours.

The new requirements would read:

GENERAL SCIENCE REQUIREMENTS (31–33 h) (30-32 h)
BIOL 105 Biology Orientation Seminar (1)              BIOL 600 Introductory Biochemistry, Lectures (4) (3)
CHEM 130 Foundations of Chemistry I (5)             MATH 121 Calculus I (5) OR MATH 115 & 116 Calculus I &
II (6)                                               II (6)
CHEM 135 Foundations of Chemistry II (5)            PHSX 114 & 115 College Physics I & II (8) OR
CHEM 310 Fund Organic Chemistry (3) OR              PHSX 211+216 & 212+236 Gen. Physics I & II (9)
CHEM 330 Organic Chemistry I (3)

The MCDB subplan for B.S. Biology requires in part:

MOLECULAR, CELLULAR, AND DEVELOPMENTAL BIOLOGY REQUIREMENTS (34–35 h)
BIOL 150/151 Prin Molecular & Cell Biol (4)          BIOL 416/536 Cell Structure and Function (3)
BIOL 152/153 Prin Organismal Biology (4)            BIOL 417 Biology of Development (3)
BIOL 350/360 Principles of Genetics (4)             BIOL 435 Introduction to Neurobiology (3)
BIOL 412 Evolutionary Biology (4)                  BIOL 600 Introductory Biochemistry, Lectures (4)
BIOL 405 Laboratory in Genetics (2) OR              BIOL 650 Advanced Neurobiology (3) OR BIOL 672 Gene
Expression                                          Expression
BIOL 426 Laboratory in Cell Biology (3) OR          (3) OR BIOL 688 Molecular Biology of Cancer (3)
BIOL 427 Developmental Biology Lab (2)              BIOL 599 Senior Seminar: MCDB (1) (must be taken Sr yr)
We are changing the number of credit hours for BIOL 600 Introductory Biochemistry, Lectures from 4 credit hours to 3 credit hours and BIOL 427 is being deleted from the Catalog.

The new requirements would read:

**MOLECULAR, CELLULAR, AND DEVELOPMENTAL BIOLOGY REQUIREMENTS (35-36 h) (34-35 h)**
BIOL 150/151 Prin Molecular & Cell Biol (4) BIOL 416/536 Cell Structure and Function (3)
BIOL 152/153 Prin Organismal Biology (4) BIOL 417 Biology of Development (3)
BIOL 350/360 Principles of Genetics (4) BIOL 435 Introduction to Neurobiology (3)
BIOL 412 Evolutionary Biology (4) BIOL 600 Introductory Biochemistry, Lectures (4) (3)
BIOL 405 Laboratory in Genetics (2) OR BIOL 650 Advanced Neurobiology (3) OR BIOL 672 Gene Expression
BIOL 426 Laboratory in Cell Biology (3) OR BIOL 427 Developmental Biology Lab (2) (3) OR BIOL 688 Molecular Biology of Cancer (3)
BIOL 599 Senior Seminar: MCDB (1) (must be taken Sr yr)

**The Teaching Biology subplan for B.S. Biology requires in part:**

**GENERAL BIOLOGY REQUIREMENTS (32–33 h)**
BIOL 150/151 Prin Molecular & Cell Biol (4) BIOL 414 Principles of Ecology (3)
BIOL 152/153 Prin Organismal Biology (4) BIOL 416/536 Cell Structure and Function (3)
BIOL 350/360 Principles of Genetics (4) BIOL 598 Research Methods (3)
BIOL 412 Evolutionary Biology (4) BIOL 599 Senior Seminar in Biology (1) (must be taken Sr yr)

One of the following two courses (3 h):
BIOL 413 History and Diversity of Organisms (3)
BIOL 428 Introduction to Systematics (3)

One of the following three courses (3-4 h):
BIOL 400/401 Fundamentals of Microbiology (3)
BIOL 408 Physiology of Organisms (3)
BIOL 600 Introductory Biochemistry, Lectures (4)

We are changing the number of credit hours for BIOL 600 Introductory Biochemistry, Lectures from 4 credit hours to 3 credit hours.

The new requirements would read:

**GENERAL BIOLOGY REQUIREMENTS (32–33 h) (32 h)**
BIOL 150/151 Prin Molecular & Cell Biol (4) BIOL 414 Principles of Ecology (3)
BIOL 152/153 Prin Organismal Biology (4) BIOL 416/536 Cell Structure and Function (3)
BIOL 350/360 Principles of Genetics (4) BIOL 598 Research Methods (3)
BIOL 412 Evolutionary Biology (4) BIOL 599 Senior Seminar in Biology (1) (must be taken Sr yr)

One of the following two courses (3 h):
BIOL 413 History and Diversity of Organisms (3)
BIOL 428 Introduction to Systematics (3)

One of the following three courses (3-4 h) (3 h):
BIOL 400/401 Fundamentals of Microbiology (3)
BIOL 408 Physiology of Organisms (3)
BIOL 600 Introductory Biochemistry, Lectures (4) (3)

**JUSTIFICATION**
The number of credit hours for BIOL 600 Introductory Biochemistry, Lectures will be decreasing from 4 credit hours to 3 credit hours because of the elimination of course material that we have determined is redundant with material that is presented in other required courses. BIOL 427 Developmental Biology Laboratory is being
incorporated into another course (request previously submitted to CUSA) and will, therefore, be removed from the KU Catalog.

**EFFECTIVE DATE.**
Fall 2015

f. **Changes to Existing Major to BS Molecular Biosciences**

**PROPOSAL**

The current B.S. Molecular Biosciences degree requires in part:

**GENERAL SCIENCE REQUIREMENTS (31-33 h)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 130 Foundation of Chemistry I (5)</td>
<td></td>
</tr>
<tr>
<td>CHEM 135 Foundation of Chemistry II (5)</td>
<td></td>
</tr>
<tr>
<td>CHEM 330 Organic Chemistry I (3)</td>
<td></td>
</tr>
<tr>
<td>CHEM 331 Organic Chemistry I Lab (2)</td>
<td></td>
</tr>
<tr>
<td>MATH 115 &amp; 116 Calculus I &amp; II (6) OR MATH 121 (5)</td>
<td></td>
</tr>
<tr>
<td>PHSX 114 &amp; 115 College Physics I &amp; II (8) OR PHSX 211+216 &amp; 212+236 Gen Physics I &amp; II (9)</td>
<td></td>
</tr>
</tbody>
</table>

**MOLECULAR BIOSCIENCES REQUIREMENTS (35 h)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 150 Prin Molecular &amp; Cell Biol (4)</td>
<td></td>
</tr>
<tr>
<td>BIOL 152 Prin Organismal Biology (4)</td>
<td></td>
</tr>
<tr>
<td>BIOL 350 Principles of Genetics (4)</td>
<td></td>
</tr>
<tr>
<td>BIOL 400 Fundamentals Microbiology (3)</td>
<td></td>
</tr>
<tr>
<td>BIOL 402 Fund Microbiology Lab (2)</td>
<td></td>
</tr>
<tr>
<td>BIOL 405 Laboratory in Genetics (2)</td>
<td></td>
</tr>
<tr>
<td>BIOL 416 Cell Structure &amp; Function (3)</td>
<td></td>
</tr>
<tr>
<td>BIOL 570 Intro to Biostatistics (3)</td>
<td></td>
</tr>
<tr>
<td>BIOL 600 Introductory Biochemistry, Lectures (4)</td>
<td></td>
</tr>
<tr>
<td>BIOL 601 Prin Biochemistry Laboratory (2)</td>
<td></td>
</tr>
<tr>
<td>BIOL 350 Principles of Genetics (4)</td>
<td></td>
</tr>
<tr>
<td>BIOL 350 Principles of Genetics (4)</td>
<td></td>
</tr>
<tr>
<td>BIOL 400 Fundamentals Microbiology (3)</td>
<td></td>
</tr>
<tr>
<td>BIOL 402 Fund Microbiology Lab (2)</td>
<td></td>
</tr>
<tr>
<td>BIOL 405 Laboratory in Genetics (2)</td>
<td></td>
</tr>
<tr>
<td>BIOL 416 Cell Structure &amp; Function (3)</td>
<td></td>
</tr>
<tr>
<td>BIOL 570 Intro to Biostatistics (3)</td>
<td></td>
</tr>
<tr>
<td>BIOL 600 Introductory Biochemistry, Lectures (4)</td>
<td></td>
</tr>
<tr>
<td>BIOL 601 Prin Biochemistry Laboratory (2)</td>
<td></td>
</tr>
</tbody>
</table>

We are moving BIOL 570 from the Molecular Biosciences requirements to the General Science requirements and adding MATH 365 and PSYC 210 as statistics course choices and we are changing the number of credit hours for BIOL 600 Introductory Biochemistry, Lectures from 4 credit hours to 3 credit hours.

The new requirements would read:

**GENERAL SCIENCE REQUIREMENTS (34-36 h)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 130 Foundation of Chemistry I (5)</td>
<td></td>
</tr>
<tr>
<td>CHEM 135 Foundation of Chemistry II (5)</td>
<td></td>
</tr>
<tr>
<td>CHEM 330 Organic Chemistry I (3)</td>
<td></td>
</tr>
<tr>
<td>CHEM 331 Organic Chemistry I Lab (2)</td>
<td></td>
</tr>
<tr>
<td>MATH 115 &amp; 116 Calculus I &amp; II (6) OR MATH 121 (5)</td>
<td></td>
</tr>
<tr>
<td>PHSX 114 &amp; 115 College Physics I &amp; II (8) OR PHSX 211+216 &amp; 212+236 Gen Physics I &amp; II (9)</td>
<td></td>
</tr>
</tbody>
</table>

**MOLECULAR BIOSCIENCES REQUIREMENTS (31 h)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 150 Prin Molecular &amp; Cell Biol (4)</td>
<td></td>
</tr>
<tr>
<td>BIOL 152 Prin Organismal Biology (4)</td>
<td></td>
</tr>
<tr>
<td>BIOL 350 Principles of Genetics (4)</td>
<td></td>
</tr>
<tr>
<td>BIOL 400 Fundamentals Microbiology (3)</td>
<td></td>
</tr>
<tr>
<td>BIOL 402 Fund Microbiology Lab (2)</td>
<td></td>
</tr>
<tr>
<td>BIOL 405 Laboratory in Genetics (2)</td>
<td></td>
</tr>
<tr>
<td>BIOL 416 Cell Structure &amp; Function (3)</td>
<td></td>
</tr>
<tr>
<td>BIOL 430 Molecular Biology Laboratory (3)</td>
<td></td>
</tr>
<tr>
<td>BIOL 599 Senior Seminar: Molecular Biosciences (1) (must be taken)</td>
<td></td>
</tr>
<tr>
<td>BIOL 600 Introductory Biochemistry, Lectures (4)</td>
<td></td>
</tr>
<tr>
<td>BIOL 601 Prin Biochemistry Laboratory (2)</td>
<td></td>
</tr>
<tr>
<td>BIOL 570, MATH 365, OR PSYC 210 Statistics (3)</td>
<td></td>
</tr>
</tbody>
</table>

**JUSTIFICATION**

The number of credit hours for BIOL 600 Introductory Biochemistry, Lectures will be decreasing from 4 credit hours to 3 credit hours because of the elimination of course material that we have determined is redundant with material that is presented in other required courses. Adding MATH 365 and PSYC 210 as statistics options increases choices for students completing this degree at the KU Edwards Campus and placing the statistics requirement with the General Science requirements better defines both the General Science and Molecular Biosciences groups of courses.
EFFECTIVE DATE. Unless otherwise requested by the department and approved by CUSA and College Assembly, the new requirements will apply to students whose KU initial term is the one immediately following final approval of the requirements. The Math change is in response to changes proposed by the Math Department.

Fall 2015

g. Changes to Existing BAS Biotechnology

PROPOSAL
The Bachelor of Applied Science degree in Biotechnology requires in part:

GENERAL SCIENCE REQUIREMENTS (44-46 h)

CHEM 130 and CHEM 135 Foundations of Chemistry I and II ............................................... 10
CHEM 330 Organic Chemistry I or 310 Fund. Organic Chemistry........................................... 3
CHEM 331 Organic Chemistry I Laboratory ............................................................................... 2
PHSX 114 College Physics I ..................................................................................................... 4
MATH 115 Calculus I (3) or MATH 121 Calculus I (5) ......................................................... 3-5
BIOL 150 (or BIOL 151 Honors) Principles of Molecular and Cellular Biology ............. 4
BIOL 152 (or BIOL 153 Honors) Principles of Organismal Biology ................................. 4
BIOL 350 Principles of Genetics ............................................................................................ 4
BIOL 400 Fundamentals of Microbiology ............................................................................... 3
BIOL 416 Cell Structure and Function .................................................................................. 3
BIOL 600 Introductory Biochemistry, Lectures ................................................................. 4

We are changing the number of credit hours for BIOL 600 Introductory Biochemistry, Lectures from 4 credit hours to 3 credit hours.

GENERAL SCIENCE REQUIREMENTS (44-46 h) (43-45 h)

CHEM 130 and CHEM 135 Foundations of Chemistry I and II ........................................... 10
CHEM 330 Organic Chemistry I or 310 Fund. Organic Chemistry........................................... 3
CHEM 331 Organic Chemistry I Laboratory ............................................................................... 2
PHSX 114 College Physics I ..................................................................................................... 4
MATH 115 Calculus I (3) or MATH 121 Calculus I (5) ......................................................... 3-5
BIOL 150 (or BIOL 151 Honors) Principles of Molecular and Cellular Biology ............. 4
BIOL 152 (or BIOL 153 Honors) Principles of Organismal Biology ................................. 4
BIOL 350 Principles of Genetics ............................................................................................ 4
BIOL 400 Fundamentals of Microbiology ............................................................................... 3
JUSTIFICATION
The number of credit hours for BIOL 600 Introductory Biochemistry, Lectures will be decreasing from 4 credit hours to 3 credit hours because of the elimination of course material that we have determined is redundant with material that is presented in other required courses.

EFFECTIVE
Fall 2015

h. Changes to Existing Major BA/BGS Linguistics

PROPOSAL

In the current set-up for the Linguistics major, a student is required to take one course from the “Structure and Description” group and another course from the “Form and Meaning” group of classes. (See highlighted sections in the “Current BA Major Requirements” below). We propose to combine the “Structure and Description” and “Form and Meaning” groups in a new “Analysis and Description” group. A student will have to take one course from this new group. (See “Proposed BA Major Requirements” below).

JUSTIFICATION

There are two reasons for the proposed change. First, in its current form, the major only allows for one elective and we would like students to have more flexibility to pursue their interests. With the proposed change, students will have two electives instead of one for the major. Second, with the combined group, scheduling of courses will be easier for the Linguistics Department because there will be fewer groups of required classes that have to be accommodated each semester.

University of Kansas
Department of Linguistics

Current BA Major Requirements

<table>
<thead>
<tr>
<th>Required Course Work for Linguistics (30 Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission Requirements (all courses listed)</td>
</tr>
<tr>
<td>LING 106 or 107 Introductory Linguistics</td>
</tr>
<tr>
<td>LING 110 or 111 Language and Mind</td>
</tr>
<tr>
<td>Core Requirements (all courses listed)</td>
</tr>
<tr>
<td>LING 305 Phonetic I</td>
</tr>
<tr>
<td>LING 312 Phonology</td>
</tr>
<tr>
<td>LING 325 Syntax I</td>
</tr>
<tr>
<td>Acquisition &amp; Processing (one of the following courses)</td>
</tr>
<tr>
<td>LING 415,425,435,438</td>
</tr>
</tbody>
</table>
Structure & Description (one of the following courses)
LING 370, 441, 447, 570, 572, 575 Field Methods / Structure of____

Form & Meaning (one of the following courses)
LING 308, 327, 331 Linguistics Analysis / Morphology / Semantics

Capstone (one of the following courses)
LING 420 Research in Linguistic Science
LING 421 Typology – Unity & Diversity of Human Lang.

Elective Course Work (3 Hours – must be junior/senior level – Linguistics courses)

Major Hours & Major GPA
While completing all required courses, majors must also meet each of the following hour and GPA minimum standards:

Major Hours
Satisfied by 30 hours of major courses, or 33 hours required if completing departmental honors course LING 496.

Major Hours in Residence
Satisfied by a minimum of 24 junior/senior (300+) hours of KU resident credit in the major.

Major Junior/Senior Hours
Satisfied by a minimum of 24 hours from junior/senior courses (300+) in the major.

Major Junior/Senior (300+) Graduation GPA
Satisfied by a minimum of a 2.0 KU GPA in junior/senior courses (300+) in the major. GPA calculations include all junior/senior courses in the field of study including F’s and repeated courses. See the Semester/Cumulative GPA Calculator.

University of Kansas
Department of Linguistics
Proposed BA Major Requirements

<table>
<thead>
<tr>
<th>Required Course Work for Linguistics (30 Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Admission Requirements</strong> (all courses listed)</td>
</tr>
<tr>
<td>LING 106 or 107 Introductory Linguistics</td>
</tr>
<tr>
<td>LING 110 or 111 Language and Mind</td>
</tr>
<tr>
<td><strong>Core Requirements</strong> (all courses listed)</td>
</tr>
<tr>
<td>LING 305 Phonetics I</td>
</tr>
</tbody>
</table>
LING 312 Phonology

LING 325 Syntax I

**Acquisition & Processing** (one of the following courses)

LING 415, 425, 435, 438

**Analysis & Description** (one of the following courses)

LING 308, 327, 331, 370, 441, 447, 570, 572, 575

**Capstone** (one of the following courses)

LING 420 Research in Linguistic Science

LING 421 Typology – Unity & Diversity of Human Lang.

**Elective Course Work** (6 Hours – must be junior/senior level – Linguistics courses)

**Major Hours & Major GPA**

While completing all required courses, majors must also meet each of the following hour and GPA minimum standards:

**Major Hours**
Satisfied by 30 hours of major courses, or 33 hours required if completing departmental honors course LING 496.

**Major Hours in Residence**
Satisfied by a minimum of 24 junior/senior (300+) hours of KU resident credit in the major.

**Major Junior/Senior Hours**
Satisfied by a minimum of 24 hours from junior/senior courses (300+) in the major.

**Major Junior/Senior (300+) Graduation GPA**
Satisfied by a minimum of a 2.0 KU GPA in junior/senior courses (300+) in the major. GPA calculations include all junior/senior courses in the field of study including F’s and repeated courses. See the Semester/Cumulative GPA Calculator.

**PROPOSAL and JUSTIFICATION:**

**MATH 121 and MATH 122 CALCULUS SEQUENCE RELATED MAJOR/MINOR CHANGES**

The Math department is transitioning from a two course, 10 hour calculus sequence to a three course, 12 hour calculus sequence. As a part of this transition, affected departments were asked to make changes to both course prerequisites and major or minor requirements as needed.

In an effort to move the changes through more quickly, the proposals below (approved by the departments) are being submitted as a group to begin the transition.

To date we have received approval from Biology and from Physics and Astronomy. Their changes are listed below. (as soon as approval is obtained from Chemistry, Economics, Environmental Studies, Geography, Geology, and Psychology these will be submitted as well)
Non-Math Courses requiring a change to prerequisites:

ASTR 391 – current prerequisite = MATH 121, and either permission of instructor, or participation in the University Honors Program.

PHSX 201-current prerequisite = PHSX 114, either MATH 116 or 121, and permission of the department

PHSX 210-current prerequisite = MATH 121 with a grade of C or better; courses in high school physics and/or chemistry recommended.

PHSX 211-current prerequisite = MATH 116 or MATH 121; courses in high school physics and/or chemistry are recommended

PHSX 212-current prerequisite = PHSX 211, PHSX 210 or PHSX 213. Corequisite: MATH 122

PHSX 213-current prerequisite = MATH 121 and permission of instructor

PHSX 214-current prerequisite = PHSX 216 together with either PHSX 211 or PHSX 210; or PHSX 213, and permission of instructor. Corequisite: MATH 122

PHSX 521-current prerequisite = PHSX 211 and PHSX 216, or PHSX 213; MATH 223; MATH 290; and MATH 220 or MATH 320

PHSX 528-current prerequisite = MATH 116 or MATH 122; and PHSX 115, PHSX 214, or PHSX 212 and PHSX 236

PHSX 531-current prerequisite = PHSX 214, or PHSX 212 and PHSX 236; PHSX 521 or special permission; MATH 223; MATH 290; and MATH 220 or MATH 320

PHSX 536-current prerequisite = PHSX 214 or PHSX 212 and PHSX 236; MATH 223; and MATH 290. PHSX 313 and 316 recommended

PHSX 623-current prerequisite = MATH 223; MATH 290; PHSX 212 and PHSX 236 (or PHSX 214 can replace PHSX 212 and PHSX 236.)

i. Changes to Existing Major to BA Astronomy and BS Astronomy

BA ASTRONOMY

Additional general science requirements:

Majors must complete courses as specified in each of the following areas. Majors are advised to take honors courses when eligible. These hours do not contribute to the minimum number of hours required for the major.

Calculus I. Satisfied by one of the following:

MATH 121 MATH 125

MATH 141 MATH 145

Calculus I

Calculus I: Honors

Or equivalent

Calculus II. Satisfied by one of the following:

MATH 122 MATH 126

Calculus II
BS ASTRONOMY

Requirements for the B.S. Degree in Astronomy

All students pursuing the Bachelor of Science in Astronomy must complete the KU Core requirements in addition to the degree and major requirements. For details regarding the KU Core requirements, please see the KU Core section of the catalog.

General science requirements:

Majors must complete courses as specified in each of the following areas. Majors are advised to take honors courses when eligible. These hours do not contribute to the minimum number of hours required for the major.

Computing and Programming. Satisfied by one of the following:

- FECS 138
- FECS 168

Calculus I. Satisfied by one of the following:

- MATH 121-MATH 125
- MATH 141-MATH 145

Or equivalent

Calculus II. Satisfied by one of the following:

- MATH 122-MATH 126
- MATH 142-MATH 146

Or equivalent

j. Changes to Existing Major to BA Biology

BA BIOLOGY

Major Course Requirements
General Science Requirements (28-31)

Biology Orientation Seminar. Satisfied by:

BIOL 105 Biology Orientation Seminar 1

Chemistry I. Satisfied by one of the following: 5

CHEM 130 General Chemistry I
CHEM 195 Foundations of Chemistry II, Honors

Chemistry II. Satisfied by one of the following: 5

CHEM 135 General Chemistry II
CHEM 195 Foundations of Chemistry II, Honors

Organic Chemistry I. Satisfied by one of the following: 3

CHEM 310 Fundamentals of Organic Chemistry
CHEM 330 Organic Chemistry I

Organic Chemistry I Laboratory. Satisfied by: 2

CHEM 331 Organic Chemistry I Laboratory

Calculus. Satisfied by one of the following: 4-6

MATH 115 & MATH 116 Calculus I and Calculus II

OR

MATH 121-MATH 125 Calculus I
MATH 141-MATH 145 Calculus I: Honors

Physics I. Satisfied by one of the following: 4-5

PHSX 114 College Physics I
PHSX 211 & PHSX 216 General Physics I and General Physics I Laboratory

Physics II. Satisfied by one of the following: 4

PHSX 115 College Physics II
PHSX 212 General Physics II
k. Changes to Existing Major to BS Biology – EEOB and MCDB and Teaching Biology

BS BIOLOGY – EEOB

Ecology, Evolution, and Organismal Biology

General Science Requirements (31–33) (29-32)

Majors must complete the following general science requirements that serve as foundational courses for this major.

Biology Orientation Seminar. Satisfied by:

**BIOL 105**  Biology Orientation Seminar 1

Chemistry I. Satisfied by one of the following:

**CHEM 130**  General Chemistry I 5

**CHEM 190**  Foundations of Chemistry I, Honors 5

Chemistry II. Satisfied by one of the following:

**CHEM 135**  General Chemistry II 5

**CHEM 195**  Foundations of Chemistry II, Honors 5

Organic Chemistry I. Satisfied by one of the following:

**CHEM 310**  Fundamentals of Organic Chemistry 3

**CHEM 330**  Organic Chemistry I 4

**CHEM 380**  Organic Chemistry I, Honors 4

Introductory Biochemistry. Satisfied by:

**BIOL 600**  Introductory Biochemistry, Lectures 4

Calculus. Satisfied by one of the following:

**MATH 115**  and Calculus II 6

& **MATH 116**
BS BIOLOGY – MCDB

Molecular, Cellular, and Developmental Biology

General Science Requirements (32-34)(34-37)

Majors must complete the following general science requirements that serve as foundational courses for this major.

Biology Orientation Seminar. Satisfied by:

**Biol 105**  Biology Orientation Seminar 1

Chemistry I. Satisfied by one of the following:

**Chem 130**  General Chemistry I

**Chem 190**  Foundations of Chemistry I, Honors

Chemistry II. Satisfied by one of the following:

**Chem 135**  General Chemistry II

**Chem 195**  Foundations of Chemistry II, Honors

Organic Chemistry I. Satisfied by one of the following:

**Chem 330**  Organic Chemistry I

**Chem 380**  Organic Chemistry I, Honors

Organic Chemistry I Laboratory. Satisfied by:

**Chem 331**  Organic Chemistry I Laboratory 2

Organic Chemistry II. Satisfied by one of the following:

**Chem 335**  Organic Chemistry II

**Chem 385**  Organic Chemistry II, Honors

Calculus. Satisfied by one of the following:

**Math 121, Math 125**  Calculus I
MATH 141 MATH 145
Calculus I: Honors

MATH 115
& MATH 116
Calculus I
and Calculus II

I. Changes to Existing Major to BA Biochemistry and BS Biochemistry

BA BIOCHEMISTRY

Requirements for the B.A. Major in Biochemistry

Major Course Requirements
General Science Requirements (33-36-38)

Majors must complete the following general science requirements that serve as foundational courses for this major.

Biology Orientation Seminar. Satisfied by:

BIOL 105
Biology Orientation Seminar

Chemistry I. Satisfied by one of the following:

CHEM 170
Chemistry for the Chemical Sciences I

CHEM 130
General Chemistry I

CHEM 190
Foundations of Chemistry I, Honors

Chemistry II. Satisfied by one of the following:

CHEM 175
Chemistry for the Chemical Sciences II

CHEM 135
General Chemistry II

CHEM 195
Foundations of Chemistry II, Honors

Organic Chemistry I. Satisfied by one of the following:

CHEM 330
Organic Chemistry I

CHEM 380
Organic Chemistry I, Honors

Organic Chemistry I Laboratory. Satisfied by:

CHEM 331
Organic Chemistry I Laboratory

Organic Chemistry II. Satisfied by:
CHEM 335
Organic Chemistry II

Calculus I and II. Satisfied by one of the following:

MATH 121, MATH 125 & MATH 122, MATH 126
Calculus I and Calculus II (or equivalent)

MATH 115 & MATH 116
Calculus I and Calculus II

BS BIOCHEMISTRY

Requirements for the B.S. Degree in Biochemistry

General Education Requirements

In addition to degree and major requirements, all students must complete the KU Core.

General Science Requirements (39–40) (37-38)

Majors must complete the following general science requirements that serve as foundational courses for this major.

Biology Orientation Seminar. Satisfied by:

BIOL 105
Biology Orientation Seminar 1

Chemistry I. Satisfied by one of the following:

CHEM 170
Chemistry for the Chemical Sciences I

CHEM 130
General Chemistry I

CHEM 190
Foundations of Chemistry I, Honors

Chemistry II. Satisfied by one of the following:

CHEM 175
Chemistry for the Chemical Sciences II

CHEM 135
General Chemistry II

CHEM 195
Foundations of Chemistry II, Honors

Organic Chemistry I. Satisfied by one of the following:

CHEM 330
Organic Chemistry I

CHEM 380
Organic Chemistry I, Honors
Organic Chemistry I Laboratory. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 331</td>
<td>Organic Chemistry I Laboratory</td>
<td>2</td>
</tr>
</tbody>
</table>

Organic Chemistry II. Satisfied by one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 335</td>
<td>Organic Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 385</td>
<td>Organic Chemistry II, Honors</td>
<td>3</td>
</tr>
</tbody>
</table>

Organic Chemistry II Laboratory. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 336</td>
<td>Organic Chemistry II Laboratory</td>
<td>2</td>
</tr>
</tbody>
</table>

Calculus I & II. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 121</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 125</td>
<td>Calculus II</td>
<td>4</td>
</tr>
</tbody>
</table>

### m. Changes to Existing Major to BA Microbiology and BS Microbiology

**BA MICROBIOLOGY**

**Requirements for the B.A. Major in Microbiology**

Course work allows students to study microbiology as part of their general education and provides a background for teachers. It also prepares students for work in medical, public health, research, and industrial laboratories; for graduate, medical, or dental school; or for the clinical laboratory sciences program.

For general requirements for the B.A. degree, see CLAS General Education Degree Requirements on the College of Liberal Arts and Sciences Degree Requirements page.

**General Science Requirements**

Microbiology General Science Requirements (36-39)

- Biology Orientation Seminar. Satisfied by:
  - BIOL 105 Biology Orientation Seminar 1

- Principles of Molecular & Cellular Biology. Satisfied by one of the following:
  - BIOL 150 Principles of Molecular and Cellular Biology 4
  - BIOL 151 Principles of Molecular and Cellular Biology, Honors

- Principles of Genetics. Satisfied by one of the following:
  - BIOL 350 Principles of Genetics 4
**BIOL 360**  Principles of Genetics, Honors

Chemistry I. Satisfied by one of the following: 5

- **CHEM 130**  General Chemistry I
- **CHEM 190**  Foundations of Chemistry I, Honors

Chemistry II. Satisfied by one of the following: 5

- **CHEM 135**  General Chemistry II
- **CHEM 195**  Foundations of Chemistry II, Honors

Organic Chemistry I. Satisfied by one of the following: 3

- **CHEM 310**  Fundamentals of Organic Chemistry
- **CHEM 330**  Organic Chemistry I

Organic Chemistry I Laboratory. Satisfied by:

- **CHEM 331**  Organic Chemistry I Laboratory 2

Calculus. Satisfied by one of the following: 5-6

- **MATH 115 & MATH 116**  Calculus I and Calculus II
- **MATH 125**  Calculus I
- **MATH 145**  Calculus I: Honors

**BS MICROBIOLOGY**

**Requirements for the B.S. Degree in Microbiology**

**General Education Requirements**

In addition to degree and major requirements, all students must complete the KU Core.

Microbiology Course Requirements

General Science Requirements (50-53)

Majors must complete 50-53 hours of the following general science requirements that serve as foundational courses for this major.

Calculus. Satisfied by one of the following: 5-6
MATH 115 & MATH 116  
Calculus I and Calculus II

MATH 121, MATH 125  
Calculus I

Statistics. Satisfied by one of the following: 3

BIOL 570  
Introduction to Biostatistics

MATH 365  
Elementary Statistics

PSYC 210  
Statistics in Psychological Research

Biochemistry I. Satisfied by: 3

BIOL 636  
Biochemistry I

Biochemistry II. Satisfied by: 3

BIOL 638  
Biochemistry II

n. Changes to Existing Major to BA Human Biology

BA HUMAN BIOLOGY

General Science Requirements (34-33)

Majors must complete the following 33-hour minimum of general science requirements that serve as foundational courses for this major.

Fundamentals of Physical Anthropology. Satisfied by:

ANTH 304  
Fundamentals of Physical Anthropology

Biology Orientation Seminar. Satisfied by:

BIOL 105  
Biology Orientation Seminar

Principles of Molecular & Cellular Biology. Satisfied by one of the following:

BIOL 150  
Principles of Molecular and Cellular Biology

BIOL 151  
Principles of Molecular and Cellular Biology, Honors

Principles of Organismal Biology. Satisfied by one of the following:

BIOL 152  
Principles of Organismal Biology
**Changes to Existing Major to BS Molecular Biosciences**

**BS MOLECULAR BIOSCIENCES**

General Science Requirements (34-37)

Majors must complete the following 34-hour minimum of general science requirements that serve as foundational courses for this major.

Fundamentals of Physical Anthropology. Satisfied by:

**ANTH 304** Fundamentals of Physical Anthropology

Biology Orientation Seminar. Satisfied by:

**BIOL 105** Biology Orientation Seminar

Principles of Molecular & Cellular Biology. Satisfied by one of the following:

**BIOL 150** Principles of Molecular and Cellular Biology

**BIOL 151** Principles of Molecular and Cellular Biology, Honors

Principles of Organismal Biology. Satisfied by one of the following:

**BIOL 152** Principles of Organismal Biology

**BIOL 153** Principles of Organismal Biology, Honors

Calculus. Satisfied by one of the following:

**MATH 115** Calculus I

& **MATH 116** and Calculus II

**MATH 121-MATH 125** Calculus I

**MATH 141-MATH 145** Calculus I: Honors
p. Changes to BAS – Biotechnology

BAS – BIOTECHNOLOGY

The Bachelor of Applied Science degree in Biotechnology requires in part:
GENERAL SCIENCE REQUIREMENTS (44-45 h)

CHEM 130 and CHEM 135 Foundations of Chemistry I and II ............................................ 10
CHEM 330 Organic Chemistry I or 310 Fund. Organic Chemistry ........................................ 3
CHEM 331 Organic Chemistry I Laboratory ........................................................................ 2
PHSX 114 College Physics I .............................................................................................. 4
MATH 115 Calculus I (3) or MATH 121 125 Calculus I (4) ........................................... 3-4

BIOL 150 (or BIOL 151 Honors) Principles of Molecular and Cellular Biology ............ 4
BIOL 152 (or BIOL 153 Honors) Principles of Organismal Biology ............................... 4
BIOL 350 Principles of Genetics ..................................................................................... 4
BIOL 400 Fundamentals of Microbiology ........................................................................ 4
BIOL 416 Cell Structure and Function ............................................................................ 3
BIOL 600 Introductory Biochemistry, Lectures .............................................................. 4

q. Changes to Existing Major to BA Physics and BS Physics

BA PHYSICS

Bachelor of Arts in Physics Major Course Requirements

Foundational Physics and Mathematics (19.5 18.5)

Majors must complete courses as specified in each of the following areas. Majors are advised to take honors courses when eligible. All honors equivalents are also acceptable to fulfill PHSX major requirements. These hours do not contribute to the minimum number of hours required for the major.

Seminar in Physics, Astronomy, & Engineering Physics. Satisfied by:

PHSX 150 Seminar in Physics, Astronomy and Engineering Physics 0.5

General Physics I. Satisfied by one of the following:

PHSX 211 General Physics I
& PHSX 216 and General Physics I Laboratory

PHSX 213 General Physics I Honors

General Physics II. Satisfied by one of the following:


PHSX 212 & PHSX 236 General Physics II and General Physics II Laboratory

PHSX 214 General Physics II Honors

Calculus I. Satisfied by:

MATH 121-MATH 125 Calculus I (or equivalent) 4

Calculus II. Satisfied by:

MATH 122-MATH 126 Calculus II (or equivalent) 4

Advanced Math Requirement (§ 6)

MATH 223-MATH 127 Vector Calculus - Calculus III 4

Elementary Linear Algebra. Satisfied by:

MATH 290 Elementary Linear Algebra 2

Differential Equations. Satisfied by one of the following:

MATH 220 Applied Differential Equations

MATH 320 Elementary Differential Equations (recommended)

BS PHYSICS

Foundational Physics and Mathematics (8.5)

Majors must complete courses as specified in each of the following areas. Majors are advised to take honors courses when eligible. All honors equivalents are also acceptable to fulfill PHSX major requirements. These hours do not contribute to the minimum number of hours required for the major.

Calculus I. Satisfied by:

MATH 121-MATH 125 Calculus I (or equivalent) 4

Calculus II. Satisfied by:

MATH 122-MATH 126 Calculus II (or equivalent) 4

Seminar in Physics, Astronomy, & Engineering Physics. Satisfied by:

PHSX 150 Seminar in Physics, Astronomy and Engineering Physics 0.5

General Physics I. Satisfied by one of the following:
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>PHSX 211</strong> &amp; <strong>PHSX 216</strong></td>
<td>General Physics I and General Physics I Laboratory</td>
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<td>General Physics II Honors</td>
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<tr>
<td><strong>CHEM 130</strong></td>
<td>Foundations of Chemistry I. Satisfied by:</td>
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<tr>
<td><strong>EECS 138</strong></td>
<td>Computing and Programming. Satisfied by:</td>
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<tr>
<td>or <strong>EECS 168</strong></td>
<td>Programming I</td>
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<tr>
<td><strong>MATH 223</strong> &amp; <strong>MATH 127</strong></td>
<td>Vector Calculus Calculus III</td>
<td>4</td>
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<td><strong>MATH 290</strong></td>
<td>Elementary Linear Algebra</td>
<td>2</td>
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<tr>
<td><strong>MATH 320</strong></td>
<td>Applied Differential Equations. Satisfied by:</td>
<td>3</td>
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<td><strong>MATH Elective</strong></td>
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<tr>
<td><strong>PHSX 518</strong></td>
<td>Mathematical Physics</td>
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<tr>
<td>PHSX 718</td>
<td>Mathematical Methods in Physical Sciences</td>
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<tr>
<td>MATH 526</td>
<td>Applied Mathematical Statistics I</td>
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<td>MATH 530</td>
<td>Mathematical Models I</td>
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<td>MATH 558</td>
<td>Introductory Modern Algebra</td>
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<tr>
<td>MATH 581</td>
<td>Numerical Methods</td>
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<tr>
<td>MATH 590</td>
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<tr>
<td>MATH 628</td>
<td>Mathematical Theory of Statistics</td>
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<td>MATH 646</td>
<td>Complex Variable and Applications</td>
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<td>MATH 647</td>
<td>Applied Partial Differential Equations</td>
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<tr>
<td>MATH 648</td>
<td>Calculus of Variations and Integral Equations</td>
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<tr>
<td>MATH 660</td>
<td>Geometry I</td>
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<tr>
<td>MATH 661</td>
<td>Geometry II</td>
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Any 700-level MATH lecture course except MATH 701 and MATH 715

**r. Changes to Existing Minor to Astrobiology**

**ASTROBIOLOGY MINOR**

Preparatory Coursework

Calculus (3-4)

Satisfied by one of the following:
MATH 121, MATH 125  Calculus I (preferred)  3-4

or MATH 115  Calculus I

Foundations of Chemistry (5)

Satisfied by the following:

CHEM 130  General Chemistry I  5

Minor Requirements

Principles of Molecular and Cellular Biology (4)

Satisfied by the following:

BIOL 150  Principles of Molecular and Cellular Biology  4

Geology (3)

Satisfied by one of the following:

GEOL 101  The Way The Earth Works

GEOL 105  History of the Earth

GEOL 121  Prehistoric Life: DNA to Dinosaurs

s. Changes to Minor in Atmospheric Science

ATMOSPHERIC SCIENCE MINOR

Requirements for the Minor in Atmospheric Science
Atmospheric Science Prerequisite or Co-requisite Knowledge

Calculus I. Satisfied by the following:

MATH 121, MATH 125  Calculus I

MATH 141, MATH 145  Calculus I: Honors

Calculus II. Satisfied by the following:

MATH 122, MATH 126  Calculus II

MATH 142, MATH 146  Calculus II: Honors

General Physics I. Satisfied by the following:
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