I. Welcome

II. Approval of CUSA Minutes from December 9, 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: EALC 328, FARS 593, GIST 697, HIST 493, LA&S 494, PCS 150, PCS 350
         
         CHANGES: CHEM 150, CHEM 530, HWC 151/251, PCS 121/221, SPLH 668/568, SPLH 671/571
         
         DELETIONS: N/A
      2. Degree Requirements for Approval:
         a. Changes to Existing Major to BA/BGS – Speech-Language-Hearing
         b. Changes to Existing Major to BA East Asian Languages & Cultures
         c. Changes to Existing Major to BA Geology
         d. NEW Major to BA Jewish Studies
         e. Changes to Existing Major to BS Behavioral Neuroscience
            Following changes all related to calculus related changes:
               f. Changes to Existing Major to BA Chemistry
               g. Changes to Existing BA Math
               h. Changes to Existing Major BS Chemistry
               i. Changes to Existing Major to BS Math
               j. Changes to Existing Minor to Chemistry
               k. Changes to Existing Minor Math
         
      3. KU Core Proposals
         a. WGSS 430 – GOAL 4, Learning Outcome 1
      
      4. Double Degree Proposal - attachment
         b. Academic Policies and Awards
            Syllabus Review Discussion

VI. Adjournment
COMMITTEE ON UNDERGRADUATE STUDIES AND ADVISING

Minutes of the Meeting for December 9, 2014

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

Chair’s Welcome: Professor Atchley called the meeting to order.

Approval of CUSA Minutes: A motion was made to approve the November 25, 2014 meeting minutes of the Committee on Undergraduate Studies & Advising. The motion was seconded and passed.

Dean’s Office Update: No report at this time.

SAS Office Update: Dr. Rufledt reported that the graduation advisors are currently working on their early audits for spring and the advising specialists have completed main enrollment. She also relayed that next Friday from 10:30-12:00 at Alderson Auditorium; the journalism campaigns class will be presenting their marketing strategies for the College.

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 the exception of PHSX 202 which was voted down unanimously due to unclear title.

      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 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:
      Professor Hilding presented the Degree Requirements nominations. A motion was made to approve the Degree Requirement. The motion was seconded and passed unanimously.

      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
I. 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 Degree Requirements Business:
A motion was made to approve the Old Degree Requirements. The motion was seconded and was voted down and will be sent back to the Physics department requesting an alternative title for PHSX 202 as many members of CUSA felt the title for PHSX 202 was too confusing. A few examples for a new title are: General Physic II Equivalency; Supplement to College Physics II; or Supplement to Algebra based Physics.
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.
a. EALC 330/530 – GOAL 4, Learning Outcome 2
b. POLS 512 – GOAL 4, Learning Outcome 1

b. Academic Policies and Awards
Professor Bayer discussed the standardized grading policy recommendation from the Dean’s Student Advisory Council. The DSAC is requesting that all syllabi include a list of elements; one being that freshman and sophomore courses have the same plus/minus grading policy if there are multi sections of the course in one semester. The grading standardization is also strongly encouraged for Junior/Senior level courses as well. The subcommittee has been reviewing these recommendations and will present a final draft of their recommendations in January.

The subcommittee is also continuing their work on revising the guideline on the petition for a special major.

Adjournment 12:28 pm
a. Curricular Changes/Degree Requirements

1. Curricular Changes for Approval/Motion to File

CHEMISTRY

CHANGE: PREREQUISITE
CHEM 150 CHEMISTRY FOR ENGINEERS  5  N
(OLD) This one semester course is designed for students in the School of Engineering who are not required to take additional chemistry courses at the college level. Topics covered in this integrated lecture and laboratory course include quantum theory, atomic structure, chemical bonding, solids, liquids, gases, thermodynamics, equilibrium, acids and bases, kinetics, polymer chemistry, and materials science. The application of these concepts to engineering problems and practices is emphasized. Prerequisite: Must have completed a course in high school chemistry and be eligible for MATH 121 (or have Departmental consent). Students not admitted to the School of Engineering must receive permission from instructor. CHEM 110 and CHEM 150 cannot both be taken for credit. LEC.

CHEM 150 CHEMISTRY FOR ENGINEERS  5  N
(NEW) This one semester course is designed for students in the School of Engineering who are not required to take additional chemistry courses at the college level. Topics covered in this integrated lecture and laboratory course include quantum theory, atomic structure, chemical bonding, solids, liquids, gases, thermodynamics, equilibrium, acids and bases, kinetics, polymer chemistry, and materials science. The application of these concepts to engineering problems and practices is emphasized. Prerequisite: Must have completed a course in high school chemistry and be eligible for MATH 121 or MATH 125 (or have Departmental consent). Students not admitted to the School of Engineering must receive permission from instructor. CHEM 110 and CHEM 150 cannot both be taken for credit. LEC.

CHANGE: PREREQUISITE
CHEM 530 PHYSICAL CHEMISTRY I  3  N
(OLD) An introduction to the basic principles of quantum mechanics, atomic and molecular structure, molecular rotations and vibrations, group theory, spectroscopy, and statistical mechanics. Prerequisite: CHEM 135, CHEM 175 or CHEM 195; PHSX 211 and PHSX 212; MATH 121, MATH 122 and MATH 220 or MATH 320; and completion of, or concurrent enrollment in MATH 290 or consent of instructor. LEC.

CHEM 530 PHYSICAL CHEMISTRY I  3  N
(NEW) An introduction to the basic principles of quantum mechanics, atomic and molecular structure, molecular rotations and vibrations, group theory, spectroscopy, and statistical mechanics. Prerequisite: CHEM 135, CHEM 175 or CHEM 195; PHSX 212; MATH 127 and MATH 220 or MATH 320; and completion of, or concurrent enrollment in MATH 290 or consent of instructor. LEC.

EAST ASIAN LANGUAGES & CULTURE

CHANGE: NEW COURSE
EALC 328 THE BODY IN JAPAN  3  H
The course examines historical and cultural concepts of the body in Japan and then focuses upon the pivotal events of the last half-century as experienced through the body. Students are introduced to a wide range of extreme bodily experiences: the regimented body of wartime, the body irradiated by the atomic bomb, the body of malnutrition and national humiliation, possessed bodies, licentious bodies, creating life through the body, the aged body, self-immolation of the body, nurturing the body, beautifying the body, and others. The primary sources of investigation and discussion are novels written after the war, films, anthropological writings, and popular culture. All readings are in English.
FARSI

CHANGE: NEW COURSE
FARS 593  DIRECTED STUDY IN PERSIAN CULTURE AND LITERATURE:  1-3  U  FP
This course is designed for students seeking proficiency in Farsi beyond FARS 320. The instructor directs the student through readings and materials in Farsi that add to the student's substantive knowledge of Iran and culture in the Farsi language. May be taken multiple semesters for credit with varying content. Prerequisite: FARS 320 and consent of instructor.

GLOBAL & INTERNATIONAL STUDIES

CHANGE: NEW COURSE
GIST 697  DIPLOMACY LAB  1-3  S
This course is designed to partner with an innovative program implemented by the US Department of State. Students enrolling in this course team up with a group of four or more students to address a real world problem posed by a State Department officer. The team, with the assistance of the instructor, engages in extensive and systematic research to address the problem and presents their finding in a formal report presented to the State Department in the desired format. Throughout the semester, the students teleconference with the State Department officer posing the question and utilize their accumulated cultural, linguistic and research knowledge to tackle a real-life, global issue. Prerequisite: GIST 301

HISTORY

CHANGE: NEW COURSE
HIST 493  HISTORY RESEARCH INTERNSHIP  1-3  H
The course allows students to work with a faculty mentor and learn firsthand the tasks that historians undertake to research and present their findings. Potential student assignments include database entry and retrieval, translation, fact checking, and compiling sources. Prerequisites: at least one 300-level history course; declared major in history; and permission of the instructor. The course is graded satisfactory / unsatisfactory.

HUMANITIES & WESTERN CIVILIZATION

CHANGE: COURSE DESCRIPTION NUMBER
HWC 151  CIVILIZATIONS AND THE INDIVIDUAL, HONORS  3  H, HL, GE3H
(OLD) Honors version of HWC 150. Introduction to perennial themes that define human experience through reading and discussion of primary texts. Topics may include the nature of humanity; nature and the supernatural; the individual and the state. Prerequisite: Membership in the University Honors Program, or permission of instructor LEC.

HWC 251  CIVILIZATIONS AND THE INDIVIDUAL, HONORS  3  H, HL, GE3H
(NEW) Honors version of HWC 250. Introduction to perennial themes that define human experience through reading and discussion of primary texts. Topics may include the nature of humanity; nature and the supernatural; the individual and the state. Prerequisite: Membership in the University Honors Program, or permission of instructor LEC.

LIBERAL ARTS & SCIENCES

CHANGE: NEW COURSE
LA&S 494  SENIOR SEMINAR IN LIBERAL ARTS AND SCIENCES  3  H
LA&S 494 is a seminar to result in the student's integration of knowledge within the liberal arts and sciences. Through lecture and discussion, students explore a series of issues or themes that integrate several disciplines in the humanities, arts, social sciences, and mathematics and natural sciences. A final project (options include a portfolio, web page, paper, presentation) demonstrates the students' knowledge of the concepts, theories, and methods of several disciplines, and their ability to integrate that knowledge across disciplines. Not open to freshmen and sophomores; recommended in the senior year. Prerequisite: Completion of at least 30 junior/senior hours.
PEACE & CONFLICT STUDIES

CHANGE: COURSE DESCRIPTION

PCS 121  INTRODUCTION TO PEACE AND CONFLICT STUDIES, HONORS  3  H, HT, GE11,GE3H
(OLD) An introduction to the content and methods of peace studies. Peace studies is a multidisciplinary
and interdisciplinary approach to the study of war and peace. Building on and integrating the work
of various fields of study, the course examines the causes of structural and direct violence within
and among societies and the diverse ways in which humans have sought peace, from conquest and
balance of power to international organizations and nonviolent strategies. Open only to students
admitted to the University Honors Program or by permission of instructor. Not open to students
who have completed PCS 120. LEC.

PCS 221  INTRODUCTION TO PEACE AND CONFLICT STUDIES, HONORS  3  H, HT, GE11,GE3H
(NEW) Honors version of PCS 220. An introduction to the content and methods of peace studies. Peace
studies is a multidisciplinary and interdisciplinary approach to the study of war and peace.
Building on and integrating the work of various fields of study, the course examines the causes of
structural and direct violence within and among societies and the diverse ways in which humans
have sought peace, from conquest and balance of power to international organizations and
nonviolent strategies. Open only to students admitted to the University Honors Program or by
permission of instructor. Not open to students who have completed PCS 220. LEC.

CHANGE: NEW COURSE

PCS 150  STUDY ABROAD TOPICS IN PEACE & CONFLICT STUDIES: _____  1-5  H
This course is designed for the study of special topics in Peace & Conflict Studies at the 100-200
level (Freshman/Sophomore level). Coursework must be arranged through the KU Office of Study
Abroad and approved by a faculty advisor in Peace & Conflict Studies. May be repeated for credit
if content varies. LEC.

CHANGE: NEW COURSE

PCS 350  STUDY ABROAD TOPICS IN PEACE & CONFLICT STUDIES: ____.  1-5  H
This course is designed for the study of special topics in Peace & Conflict Studies at the
Junior/Senior level. Coursework must be arranged through the KU Office of Study Abroad and
approved by a faculty advisor in Peace & Conflict Studies. May be repeated for credit if content
varies. LEC.

SPEECH-LANGUAGE-HEARING

CHANGE: NUMBER

SPLH 668  INTRODUCTION TO AUDIOLOGIC ASSESSMENT AND REHABILITATION  4  U
(OLD) This course provides training in clinical management of communicative disorders in children and
adults. Principles of evaluation, diagnostics procedures, application of diagnostic information,
intervention planning, intervention process, data collection and application, report writing, and
interactions with parents and other professionals are examined. Participation in observation and
laboratory activities is required. Prerequisite: SPLH 463/663: Hearing Science.

SPLH 568  INTRODUCTION TO AUDIOLOGIC ASSESSMENT AND REHABILITATION  4  U
(NEW) This course provides training in clinical management of communicative disorders in children and
adults. Principles of evaluation, diagnostics procedures, application of diagnostic information,
intervention planning, intervention process, data collection and application, report writing, and
interactions with parents and other professionals are examined. Participation in observation and
laboratory activities is required. Prerequisite: SPLH 463/663: Hearing Science.

CHANGE: NUMBER

SPLH 671  INTRODUCTION TO SPEECH-LANGUAGE PATHOLOGY  4  U
(OLD) This course provides training in clinical management of communicative disorders in children and
adults. Principles of evaluation, application of diagnostic information, intervention planning,
intervention process, data collection and application, report writing, and interactions with parents
and other professionals are examined. Participation in observation and laboratory activities is
required. No prerequisites.

SPLH 571  INTRODUCTION TO SPEECH-LANGUAGE PATHOLOGY  4  U
This course provides training in clinical management of communicative disorders in children and adults. Principles of evaluation, application of diagnostic information, intervention planning, intervention process, data collection and application, report writing, and interactions with parents and other professionals are examined. Participation in observation and laboratory activities is required.

2. **Degree Requirements for Approval**

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

   **PROPOSAL:** We requested a change in course numbering for two courses. We requested that **SPLH 668 become SPLH 568** and that **SPLH 671 become SPLH 571**. Both are required courses. Therefore these changes need to be reflected in the Major requirements for SPLH.

   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 1

   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** Principles of Speech Science 3

   Introduction to Audiological Assessment & Rehabilitation. Satisfied by:

   **SPLH 668**–**SPLH 568** Introduction to Audiological Assessment and Rehabilitation 4

   Introduction to Speech-Language Pathology. Satisfied by:

   **SPLH 671**–**SPLH 571** Introduction to Speech-Language Pathology 4

   **JUSTIFICATION**

   In an effort to streamline the sequence of coursework for students pursuing a major in speech-language pathology, several courses in the department will undergo numbering changes in the fall semester of 2015. To remain consistent with these changes and align courses in an appropriate sequence for the students, it is requested that this course number be changed, with no effect to the course content or scope. The course will remain a junior/senior-level course with greater emphasis and identification as a course to be taken during a traditional student’s junior year to allow for enrollment in SPLH 672, for which 671 is a prerequisite, in the student’s senior year.

   **EFFECTIVE DATE:** Fall 2015
b. Changes to Existing Major to BA East Asian Languages & Cultures

Japanese Language and Literature Concentration
East Asian Studies w/Japanese Language Concentration
Chinese Language and Literature Concentration
East Asian Languages and Cultures with a Chinese Language concentration

Requirements for the B.A. Major

Chinese Language and Literature Concentration

East Asian Languages and Cultures Prerequisite Knowledge (20)

Elementary Chinese I. Satisfied by:

CHIN 104 Elementary Chinese I 5

Elementary Chinese II. Satisfied by:

CHIN 108 Elementary Chinese II 5

Language Proficiency. Satisfied by:

CHIN 204 Intermediate Chinese I
& CHIN 208 and Intermediate Chinese II 10

East Asian Languages and Cultures Core Knowledge and Skill (22)

Majors choosing this concentration must complete a course or courses in each of the following areas:

Eastern Civilizations. Satisfied by:

ECIV 304 Eastern Civilizations 3

or ECIV 305 Eastern Civilizations Honors

Advanced Language. Satisfied by:

CHIN 504 Advanced Modern Chinese I
& CHIN 508 and Advanced Modern Chinese II 10

CHIN 342 Introduction to Classical Chinese 3

or CHIN 542 Introduction to Classical Chinese

CHIN 562 Modern Chinese Texts I 3

And one of the following: 3

CHIN 544 Readings in Classical Chinese: _____
CHIN 564  Modern Chinese Texts II

EALC/LING 572  The Structure of Chinese

East Asian Languages and Cultures Required Elective (0)

Majors choosing this concentration must complete a course in each of the following areas (A course cannot be used in more than 1 area):

Chinese Literature or Culture in Translation. Satisfied by one course, e.g.:

- EALC 314  Traditional Chinese Literature in Translation
- EALC 318/518  Modern Chinese Fiction and Film
- EALC 319/519  Contemporary Chinese Fiction and Film
- EALC 330/530  Chinese Literature and Culture: Premodern Times
- EALC 370  Chinese Folk Belief
- EALC 418/618  Sexual Politics in Chinese Literature and Culture: Premodern Times
- EALC 499  Honors Thesis
- EALC 578  Gender and Society in Modern China

Pre-modern China. Satisfied by one course, e.g.:

- EALC 330/530  Chinese Literature and Culture: Premodern Times
- EALC 415/615  Ancient China
- EALC 418/618  Sexual Politics in Chinese Literature and Culture: Premodern Times
- EALC 508  Religion in China
- EALC 555  Buddhists and Buddhism in China
- EALC 583  Imperial China
- EALC 642  Chinese Thought
- EALC 499  Honors Thesis

Modern China. Satisfied by one course, e.g.:

- EALC 318/518  Modern Chinese Fiction and Film
- EALC 319/519  Contemporary Chinese Fiction and Film
EALC 368  The Peoples of China
EALC 420/620  Daily Life in China From the Opium War to the Present
EALC 578  Gender and Society in Modern China
EALC 584  Modern China
EALC 585  Reform in Contemporary China
EALC 649  Doing Business With China: Law and Policy
EALC 678  Chinese Foreign Policy
EALC 499  Honors Thesis

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 31 hours of major courses.

Major Hours in Residence
Satisfied by a minimum of 12 hours of KU resident credit in the major.

Major Junior/Senior Hours
Satisfied by a minimum of 31 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.

Japanese Language and Literature Concentration

East Asian Languages and Cultures Prerequisite Knowledge (20)

Elementary Japanese I. Satisfied by:

JPN 104  Elementary Japanese I  5

Elementary Japanese II. Satisfied by:

JPN 108  Elementary Japanese II  5

Language Proficiency. Satisfied by:
JPN 204 Intermediate Japanese I
& JPN 208 and Intermediate Japanese II

East Asian Languages and Cultures Core Knowledge and Skills (19)

Majors choosing this concentration must complete a course or courses in each of the following areas:

Eastern Civilizations. Satisfied by one of the following:

ECIV 304 Eastern Civilizations 3
or ECIV 305 Eastern Civilizations Honors

Advanced Language. Satisfied by:

JPN 306 & JPN 310 Advanced Japanese Conversation I and Advanced Japanese Conversation II 4

JPN 504 & JPN 508 Advanced Modern Japanese I and Advanced Modern Japanese II 6

JPN 562 Modern Japanese Texts I 3

And one of the following: 3

JPN 564 Modern Japanese Texts II
JPN 569 Advanced Business Japanese

EALC/LING 570 The Structure of Japanese

East Asian Languages and Cultures Required Elective (0)

Majors choosing this concentration must complete a course in each of the following areas (a course cannot be used in more than 1 area):

Pre-Modern Japanese Literature in Translation. Satisfied by one course, e.g.:

EALC 312 Traditional Japanese Literature in Translation
EALC 575 Love, Sexuality and Gender in Japanese Literature

Modern Japanese Literature in Translation. Satisfied by one course, e.g.:

EALC 316 Modern Japanese Literature in Translation: 1868-1945
EALC 317 Contemporary Japanese Literature in Translation: 1945-Present
EALC 328/728 The Body in Japan
EALC 412 Visual and Literary Culture in Modern Japan
Pre-Modern Japan. Satisfied by one course on pre-modern Japan, e.g.:

**EALC 312**  Traditional Japanese Literature in Translation

**EALC 410**  The Culture of Play in Japan

**EALC 411**  The Culture of Play in Japan, Honors

**EALC 509**  Religion in Japan

**EALC 587**  Early Modern Japan

**EALC 499**  Honors Thesis

Modern Japan. Satisfied by one course on modern Japan, e.g.:

**EALC 316**  Modern Japanese Literature in Translation: 1868-1945

**EALC 317**  Contemporary Japanese Literature in Translation: 1945-Present

**EALC 328/728**  The Body in Japan

**EALC 543**  Contemporary Japanese Film

**EALC 588**  Japan, 1853-1945

**EALC 589**  Japan Since 1945

**EALC 499**  Honors Thesis

**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 31 hours of major courses.

**Major Hours in Residence**
Satisfied by a minimum of 12 hours of KU resident credit in the major.

**Major Junior/Senior Hours**
Satisfied by a minimum of 31 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](#).

**East Asian Studies with Chinese Language Concentration**
East Asian Languages and Cultures Prerequisite Knowledge (20)

Elementary Chinese I. Satisfied by:

CHIN 104 Elementary Chinese I 5

Elementary Chinese II. Satisfied by:

CHIN 108 Elementary Chinese II 5

Language Proficiency. Satisfied by:

CHIN 204 Intermediate Chinese I 5
& CHIN 208 Intermediate Chinese II 5

East Asian Languages and Cultures Core Knowledge and Skills (13)

Majors choosing this concentration must complete a course or courses in each of the following areas:

Eastern Civilizations. Satisfied by one of the following

ECIV 304 Eastern Civilizations 3
or ECIV 305 Eastern Civilizations Honors 3

Advanced Language. Satisfied by:

CHIN 504 Advanced Modern Chinese I 5
& CHIN 508 Advanced Modern Chinese II 5

East Asian Languages and Cultures Required Elective (0)

Majors choosing this concentration must complete a course in each of the following areas (a course cannot be used in more than one area):

Pre-Modern China. Satisfied by one course on pre-modern China, e.g.:

EALC 314 Traditional Chinese Literature in Translation 3
EALC 330 Chinese Literature and Culture: Premodern Times 3
EALC 415 Ancient China 3
EALC 418 Sexual Politics in Chinese Literature and Culture: Premodern Times 3
EALC 583 Imperial China 3

Modern China. Satisfied by one course on modern China, e.g.:

EALC 318/518 Modern Chinese Fiction and Film 3
EALC 319/519 Contemporary Chinese Fiction and Film

EALC 578 Gender and Society in Modern China

EALC 420 Daily Life in China From the Opium War to the Present

EALC 584 Modern China

EALC 585 Reform in Contemporary China

China in the Humanities. Satisfied by one course on China in a humanities discipline, e.g.:

EALC 301 Cultural Traditions of China, Inner Asia, and Tibet

EALC 310 The Chinese Novel

EALC 314 Traditional Chinese Literature in Translation

EALC 317 Contemporary Japanese Literature in Translation: 1945-Present

EALC 318/518 Modern Chinese Fiction and Film

EALC 330 Chinese Literature and Culture: Premodern Times

EALC 370 Chinese Folk Belief

EALC 415 Ancient China

EALC 418 Sexual Politics in Chinese Literature and Culture: Premodern Times

EALC 508 Religion in China

EALC 530 Chinese Literature and Culture: Premodern Times

EALC 555 Buddhists and Buddhism in China

EALC 578 Gender and Society in Modern China

EALC 583 Imperial China

EALC 584 Modern China

China in the Social Sciences. Satisfied by one course on China in a social science discipline, e.g.:

EALC 368 The Peoples of China

EALC 572 The Structure of Chinese

EALC 585 Reform in Contemporary China

EALC 678 Chinese Foreign Policy
Advanced East Asian Languages and Cultures. Satisfied by one junior/senior-level (300+) EALC course.

East Asian Course. Satisfied by one course based on an East Asian country other than China, e.g.:

**EALC 302**  Cultural Traditions of Japan and Korea

**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 31 hours of major courses.

**Major Hours in Residence**
Satisfied by a minimum of 12 hours of KU resident credit in the major.

**Major Junior/Senior Hours**
Satisfied by a minimum of 31 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](#).

**East Asian Studies with Japanese Language Concentration**

East Asian Languages and Cultures Prerequisite Knowledge (20)

Elementary Japanese I. Satisfied by:

**JPN 104**  Elementary Japanese I  5

Elementary Japanese II. Satisfied by:

**JPN 108**  Elementary Japanese II  5

Language Proficiency. Satisfied by:

**JPN 204**  Intermediate Japanese I  10
&  **JPN 208**  and Intermediate Japanese II

East Asian Languages and Cultures Core Knowledge and Skill (13)

 Majors choosing this concentration must complete a course or courses in each of the following areas:

 Eastern Civilizations. Satisfied by one of the following:

 **ECIV 304**  Eastern Civilizations  3
or ECIV 305 Eastern Civilizations Honors

Advanced Language. Satisfied by:

**JPN 306** Advanced Japanese Conversation I

& **JPN 310** and Advanced Japanese Conversation II

4

**JPN 504** Advanced Modern Japanese I

& **JPN 508** and Advanced Modern Japanese II

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East Asian Languages and Cultures Required Elective (0)

Majors choosing this concentration must complete a course in each of the following areas (a course cannot be used in more than one area):

Pre-modern Japan. Satisfied by one course on pre-modern Japan, e.g.:

**EALC 312** Traditional Japanese Literature in Translation

**EALC 410** The Culture of Play in Japan

**EALC 411** The Culture of Play in Japan, Honors

**EALC 587** Early Modern Japan

Modern Japan. Satisfied by one course on modern Japan, e.g.:

**EALC 316** Modern Japanese Literature in Translation: 1868-1945

**EALC 317** Contemporary Japanese Literature in Translation: 1945-Present

**EALC 328/728** The Body in Japan

**EALC 543** Contemporary Japanese Film

**EALC 588** Japan, 1853-1945

**EALC 589** Japan Since 1945

Japan in the Humanities. Satisfied by one course on Japan in a humanities discipline, e.g.:

**EALC 312** Traditional Japanese Literature in Translation

**EALC 315** Survey of Japanese Film

**EALC 316** Modern Japanese Literature in Translation: 1868-1945

**EALC 317** Contemporary Japanese Literature in Translation: 1945-Present

**EALC 328/728** The Body in Japan
The Culture of Play in Japan
The Culture of Play in Japan, Honors
Visual and Literary Culture in Modern Japan
Religion in Japan
Contemporary Japanese Film
Love, Sexuality and Gender in Japanese Literature
Early Modern Japan
Japan, 1853-1945
Japan Since 1945

Japan in the Social Sciences. Satisfied by one course on Japan in a social science discipline, e.g.:
The Body in Japan
Contemporary Japan
The Structure of Japanese

Advanced East Asian Languages and Cultures. Satisfied by one junior/senior-level (300+) EALC course
Cultural Traditions of China, Inner Asia, and Tibet

East Asian Course. Satisfied by one course based on an East Asian country other than Japan.

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 31 hours of major courses.

**Major Hours in Residence**
Satisfied by a minimum of 12 hours of KU resident credit in the major.

**Major Junior/Senior Hours**
Satisfied by a minimum of 31 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.
c. Changes to Existing Major to BA Geology

PROPOSAL

Revision of the Geology B.A.
Current geology course requirements include GEOL 331 “Sedimentology and Surface Processes” (4 credits). This course has been revised to include a change in course title and course content (a curricular change for changing a course form was submitted on October 8, 2014). The new course requirement is GEOL 331 Sedimentology and Stratigraphy (4 credits).

Geology Core Knowledge and Skills (24)

Majors must complete the following core courses:

Introduction to Geology. Satisfied by:

**GEOL 101**  The Way The Earth Works  3

Geology Fundamentals Laboratory. Satisfied by:

**GEOL 103**  Geology Fundamentals Laboratory  2

Mineralogy and Structure of the Earth. Satisfied by:

**GEOL 311**  Mineralogy and Structure of the Earth  3

Sedimentology and Surface Processes. Satisfied by:

**GEOL 331**  Sedimentology and **Stratigraphy**  4

Field Investigation. Satisfied by:

**GEOL 360**  Field Investigation  2

Paleontology. Satisfied by:

**GEOL 521**  Paleontology  3

Introductory Field Geology. Satisfied by:

**GEOL 560**  Introductory Field Geology  3

Structural Geology. Satisfied by:

**GEOL 562**  Structural Geology  4

Geology Required Electives (15)

Majors must complete a minimum of 15 hours in geology or related courses. Several possible tracks of upper-level course work are given below.

JUSTIFICATION
The proposed change is the result of The Department of Geology revising its curriculum. A required course for the BA in General Geology, GEOL 331, was revised which resulted in the proposed curricular revision.

EFFECTIVE: Fall 2015

d. NEW Major BA Jewish Studies

PROPOSAL
NEW MAJOR PROPOSAL – BA JEWISH STUDIES

Students take 30 credit hours structured according to the following plan:

2 Jewish culture or history courses;
2 religion courses relevant to Judaism;
2 courses of intermediate or advanced Hebrew and/or Yiddish;
1 capstone seminar course (JWSH 601), writing intensive;¹ and
3 elective courses, allowing the student to explore Jewish Studies in greater breadth and depth.

Culture or History (2 courses)

JWSH 300 Topics in Jewish Studies: _____
Jewish American Popular Culture (meets with AMS 344/THR 380)
Archaeology of Ancient Israel
JWSH 311 Narratives of Jewish Life
JWSH 318 Jews and Slavs in Eastern Europe
JWSH 315/HIST 325/SPAN 302 Spanish Inquisition
JWSH 327 Jewish Secular Culture
JWSH 338 Languages of the Jews (339 H)
JWSH 340 Topics in Modern Jewish Literature
JWSH/HIST 343 The Holocaust in History
JWSH 350 Contemporary Jewish Identities
JWSH 361 Jewish Film
JWSH/REL 526 Jewish History & Literature in the Greek & Roman Periods
JWSH/REL 560 Classical and Contemporary Jewish Thought

¹ This capstone course (JWSH 601) will be taught each semester and is required for all majors; students will be strongly advised to take the course in the year before they graduate. The topic of the course may be similar to that in a regularly taught JS course, in which case the students in 601 will meet separately to develop their own research projects. At present (March 2014), JWSH 601 does not yet exist; once the JS major is approved the appropriate form for the new course will be submitted to CUSA.
JWSH/REL 570: Studies in Judaism
JWSH 572 Jewish Folklore (573 H)
THR 302/702 Sem in: Theatre & Genocide

Religion (2 courses relevant to Judaism)
JWSH/REL 107 Living Religions of the West
JWSH/REL 124 Understanding the Bible (125 H)
JWSH 300 Topics in Jewish Studies
  Mysticism and the Supernatural
  The Story of the Talmud
JWSH 321/REL 311 Religion of Ancient Israel
JWSH/REL 325 Introduction to Judaism
JWSH/REL 523 The Dead Sea Scrolls
JWSH/REL 525 Jews and Christians

Language (2 courses)

prerequisite: successful completion of introductory Hebrew or Yiddish

2 further courses in Languages (Hebrew and/or Yiddish) at or above the 200-level

JWSH 338 Languages of the Jews (339 H)
HEBR 210 Intermediate Israeli Hebrew I
HEBR 220 Intermediate Israeli Hebrew II
HEBR 230 Biblical Hebrew I
HEBR 240 Biblical Hebrew II
HEBR 310: Introduction to Modern Hebrew Literature
HEBR 340 Advanced Israeli Hebrew I
HEBR 350 Advanced Israeli Hebrew II
HEBR 395 Study Abroad Topics in Hebrew: _____ (3-6 ch)
HEBR 410 Studies Modern Hebrew Literature & Culture I
HEBR 420 Studies Modern Hebrew Literature & Culture II
HEBR 490 Independent Study (1-3 ch)
YDSH 212: Intermediate Yiddish I
YDSH 216: Intermediate Yiddish II
YDSH 300 Studies in Yiddish
YDSH 395 Study Abroad Topics in Yiddish (3-6 ch)
YDSH 490 Independent Study (1-3 ch)

Capstone course (1 course)

JWSH 601. Senior seminar (lecture topics vary; writing intensive)

Electives (3 courses)

Any 3 courses from the previous lists

Justification:

Due to the rising number of KU undergraduate students interested in Jewish Studies, non-Jews and Jews alike, a new major in Jewish Studies will have great appeal. At the moment of writing this proposal, two undergraduate students minoring in Jewish Studies are submitting proposals for a Special Major in Jewish Studies. Along with the rise in the number of courses (both original and cross-listed) and study abroad opportunities (both in Israel and elsewhere), a Jewish Studies major will boost our already growing number of students in the JS Program as attested by increased enrollments and by a rising number of JS minors (from 9 in January 2013 to 19 in March 2014).

As the only such undergraduate program in the state of Kansas, this major in Jewish Studies would satisfy a primary criterion in the University’s mission statement, to offer a unique curriculum of study to the people of Kansas.

Because an undergraduate major in Jewish Studies would be an interdisciplinary program, taking advantage of courses, programs, and research projects across a broad spectrum of departments and units (e.g., Religious Studies, History, Classics, English, Slavic), such a major would also fit with KU’s Planning for Excellence which emphasizes collaborative interdisciplinary research and teaching. The Jewish Studies major fits the Provost’s third Strategic Initiative of “building communities” at the undergraduate level by reaching out to the large Jewish communities both here in Lawrence (the Lawrence Jewish Community Center, student fraternities on KU campus, and KU Hillel and Chabad), in the Kansas City Metropolitan Area (the Kansas City Jewish Community Campus), in Topeka (the Jewish Community Center and Temple Beth-Shalom), and in Wichita (the Mid-Kansas Jewish Federation).

c. Changes to Existing Major to BS Behavioral Neuroscience

CHANGE TO EXISTING MAJOR – BS IN BEHAVIORAL NEUROSCIENCE

This change is to address the restructuring of the calculus sequence.

Mathematics (14 hrs. minimum)

Satisfied by completing a total of 4 mathematics courses totaling at least 14 hours, of which at least 6 hours must be calculus or calculus based. The 6–10 hours of calculus can be satisfied by taking at least one calculus I course (MATH 115 or 121) and one calculus II course (MATH 116 or 126). The remaining four to eight hours of mathematics can be satisfied by taking a minimum of two additional math courses at any level (excluding MATH 002).

Following changes all related to calculus related changes:

f. Changes to Existing Major to BA Chemistry
BA CHEMISTRY – change to existing major:

The following changes are to address the re-sequencing of the calculus courses.

**Current**

**BA CHEMISTRY**

Mathematics and Physics (14-19)

- **MATH 115** Calculus I
  - 3-5
- or **MATH 121** Calculus I
- **MATH 116** Calculus II
  - 3-5
- or **MATH 122** Calculus II

- **PHSX 114** College Physics I
  - 4-5
- or **PHSX 211**
- & **PHSX 216** General Physics I
  - and General Physics I Laboratory

- **PHSX 115** College Physics II
  - 4
- or **PHSX 212**
- & **PHSX 236** General Physics II
  - and General Physics II Laboratory

**New**

**BA CHEMISTRY**

Mathematics and Physics (14-19)

- **MATH 115** Calculus I
  - 3-5
- Or MATH 121, OR **MATH 125** Calculus I
- **MATH 116** Calculus II
  - 3-5
- Or MATH 122, OR **MATH 126** Calculus II

- **PHSX 114** College Physics I
  - 4-5
- or **PHSX 211**
- & **PHSX 216** General Physics I
  - and General Physics I Laboratory

- **PHSX 115** College Physics II
  - 4
- or **PHSX 212** General Physics II
### Old Requirements for the B.A. Major

#### Mathematics Core Knowledge and Skills (21)

Majors must complete courses as specified in each of the following areas:

<table>
<thead>
<tr>
<th>Area</th>
<th>Satisfied by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus I</td>
<td>Calculus I: Satisfied by one of the following:</td>
</tr>
<tr>
<td></td>
<td><strong>MATH 121</strong> or <strong>MATH 141</strong></td>
</tr>
<tr>
<td>Calculus II</td>
<td>Calculus II: Satisfied by one of the following:</td>
</tr>
<tr>
<td></td>
<td><strong>MATH 122</strong> or <strong>MATH 142</strong></td>
</tr>
<tr>
<td>Vector Calculus</td>
<td>Vector Calculus: Satisfied by one of the following:</td>
</tr>
<tr>
<td></td>
<td><strong>MATH 223</strong> or <strong>MATH 243</strong></td>
</tr>
<tr>
<td>Elementary Linear Algebra</td>
<td>Elementary Linear Algebra: Satisfied by one of the</td>
</tr>
<tr>
<td></td>
<td>following: <strong>MATH 290</strong> or <strong>MATH 291</strong></td>
</tr>
<tr>
<td>Analysis</td>
<td>Analysis: Satisfied by one of the following:</td>
</tr>
<tr>
<td></td>
<td><strong>MATH 500</strong> or <strong>MATH 765</strong></td>
</tr>
<tr>
<td>Linear Algebra</td>
<td>Linear Algebra: Satisfied by one of the following:</td>
</tr>
<tr>
<td></td>
<td><strong>MATH 590</strong> or <strong>MATH 790</strong></td>
</tr>
</tbody>
</table>

#### Math Sequence Requirement (6)

Majors must choose one of the following 2-course sequences. Courses selected above may contribute to the minimum of 6 hours.

<table>
<thead>
<tr>
<th>Area</th>
<th>Satisfied by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probability &amp; Statistics</td>
<td>Probability: Satisfied by:</td>
</tr>
<tr>
<td></td>
<td><strong>MATH 627</strong></td>
</tr>
<tr>
<td>Course</td>
<td>Requirement</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>&amp; MATH 628</td>
<td>and Mathematical Theory of Statistics</td>
</tr>
</tbody>
</table>

Geometry. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 660</td>
<td>Geometry I</td>
</tr>
<tr>
<td>&amp; MATH 661</td>
<td>and Geometry II</td>
</tr>
</tbody>
</table>

Analysis. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 765</td>
<td>Mathematical Analysis I</td>
</tr>
<tr>
<td>&amp; MATH 766</td>
<td>and Mathematical Analysis II</td>
</tr>
</tbody>
</table>

Numerical Analysis. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 781</td>
<td>Numerical Analysis I</td>
</tr>
<tr>
<td>&amp; MATH 782</td>
<td>and Numerical Analysis II</td>
</tr>
</tbody>
</table>

Linear & Modern Algebra. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 790</td>
<td>Linear Algebra II</td>
</tr>
<tr>
<td>&amp; MATH 791</td>
<td>and Modern Algebra</td>
</tr>
</tbody>
</table>

Analysis & Complex Variables. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 500</td>
<td>Intermediate Analysis</td>
</tr>
<tr>
<td>&amp; MATH 646</td>
<td>and Complex Variable and Applications</td>
</tr>
</tbody>
</table>

Statistics & Regression Analysis. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 526</td>
<td>Applied Mathematical Statistics I</td>
</tr>
<tr>
<td>&amp; MATH 605</td>
<td>and Applied Regression Analysis</td>
</tr>
</tbody>
</table>

Statistics & Time Series Analysis. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 526</td>
<td>Applied Mathematical Statistics I</td>
</tr>
<tr>
<td>&amp; MATH 611</td>
<td>and Time Series Analysis</td>
</tr>
</tbody>
</table>

Mathematical Models. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 530</td>
<td>Mathematical Models I</td>
</tr>
<tr>
<td>&amp; MATH 531</td>
<td>and Mathematical Models II</td>
</tr>
</tbody>
</table>

Number Theory & Modern Algebra. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 540</td>
<td>Elementary Number Theory</td>
</tr>
<tr>
<td>&amp; MATH 558</td>
<td>and Introductory Modern Algebra</td>
</tr>
</tbody>
</table>
Modern Algebra & Coding Theory. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 558</td>
<td>Introductory Modern Algebra</td>
</tr>
<tr>
<td>&amp; MATH 601</td>
<td>and Algebraic Coding Theory</td>
</tr>
</tbody>
</table>

Numerical Methods & Linear Algebra. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 581</td>
<td>Numerical Methods</td>
</tr>
<tr>
<td>&amp; MATH 591</td>
<td>and Applied Numerical Linear Algebra</td>
</tr>
</tbody>
</table>

Linear Algebra. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 590</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>&amp; MATH 790</td>
<td>and Linear Algebra II</td>
</tr>
</tbody>
</table>

Complex Variables & Partial Differential Equations. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 646</td>
<td>Complex Variable and Applications</td>
</tr>
<tr>
<td>&amp; MATH 647</td>
<td>and Applied Partial Differential Equations</td>
</tr>
</tbody>
</table>

Partial Differential Equations & Calculus of Variations. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 647</td>
<td>Applied Partial Differential Equations</td>
</tr>
<tr>
<td>&amp; MATH 648</td>
<td>and Calculus of Variations and Integral Equations</td>
</tr>
</tbody>
</table>

Combinatorics & Graph Theory. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 724</td>
<td>Combinatorial Mathematics</td>
</tr>
<tr>
<td>&amp; MATH 725</td>
<td>and Graph Theory</td>
</tr>
</tbody>
</table>

Math Breadth (15)

Majors must complete a minimum of 5 mathematics courses numbered 300 and above (each at least 3 credits), excluding MATH 365, for sequence requirements. The goals are to gain exposure to a variety of concepts and methods in mathematics, develop abstract and critical thinking skills, and understand the role of mathematics, or interdisciplinary work involving mathematics.

**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 30 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 15 hours from junior/senior courses (300+) in the major.

- **Major Junior/Senior Graduation GPA**

---

25
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.

NEW Requirements for the B.A. Major

<table>
<thead>
<tr>
<th>Mathematics Core Knowledge and Skills (20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Majors must complete courses as specified in each of the following areas:</td>
</tr>
</tbody>
</table>

Calculus I. Satisfied by one of the following:

<table>
<thead>
<tr>
<th>MATH 125</th>
<th>Calculus I</th>
</tr>
</thead>
<tbody>
<tr>
<td>or MATH 145</td>
<td>Calculus I: Honors</td>
</tr>
</tbody>
</table>

Calculus II. Satisfied by one of the following:

<table>
<thead>
<tr>
<th>MATH 126</th>
<th>Calculus II</th>
</tr>
</thead>
<tbody>
<tr>
<td>or MATH 146</td>
<td>Calculus II: Honors</td>
</tr>
</tbody>
</table>

Calculus III. Satisfied by one of the following:

<table>
<thead>
<tr>
<th>MATH 127</th>
<th>Vector Calculus</th>
</tr>
</thead>
<tbody>
<tr>
<td>or MATH 147</td>
<td>Vector Calculus, Honors</td>
</tr>
</tbody>
</table>

Elementary Linear Algebra. Satisfied by one of the following:

<table>
<thead>
<tr>
<th>MATH 290</th>
<th>Elementary Linear Algebra</th>
</tr>
</thead>
<tbody>
<tr>
<td>or MATH 291</td>
<td>Elementary Linear Algebra, Honors</td>
</tr>
</tbody>
</table>

Analysis. Satisfied by one of the following:

<table>
<thead>
<tr>
<th>MATH 500</th>
<th>Intermediate Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>or MATH 765</td>
<td>Mathematical Analysis I</td>
</tr>
</tbody>
</table>

Linear Algebra. Satisfied by one of the following:

<table>
<thead>
<tr>
<th>MATH 590</th>
<th>Linear Algebra</th>
</tr>
</thead>
<tbody>
<tr>
<td>or MATH 790</td>
<td>Linear Algebra II</td>
</tr>
</tbody>
</table>

Math Sequence Requirement (6)

Majors must choose one of the following 2-course sequences. Courses selected above may contribute to the minimum of 6 hours.

Probability & Statistics. Satisfied by:

<table>
<thead>
<tr>
<th>MATH 627</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>&amp; MATH 628</td>
<td>and Mathematical Theory of Statistics</td>
</tr>
</tbody>
</table>
### Geometry
- Satisfied by:
  - MATH 660 & MATH 661: Geometry I and Geometry II

### Analysis
- Satisfied by:
  - MATH 765 & MATH 766: Mathematical Analysis I and Mathematical Analysis II

### Numerical Analysis
- Satisfied by:
  - MATH 781 & MATH 782: Numerical Analysis I and Numerical Analysis II

### Linear & Modern Algebra
- Satisfied by:
  - MATH 790 & MATH 791: Linear Algebra II and Modern Algebra

### Analysis & Complex Variables
- Satisfied by:
  - MATH 500 & MATH 646: Intermediate Analysis and Complex Variable and Applications

### Statistics & Regression Analysis
- Satisfied by:
  - MATH 526 & MATH 605: Applied Mathematical Statistics I and Applied Regression Analysis

### Statistics & Time Series Analysis
- Satisfied by:
  - MATH 526 & MATH 611: Applied Mathematical Statistics I and Time Series Analysis

### Mathematical Models
- Satisfied by:
  - MATH 530 & MATH 531: Mathematical Models I and Mathematical Models II

### Number Theory & Modern Algebra
- Satisfied by:
  - MATH 540 & MATH 558: Elementary Number Theory and Introductory Modern Algebra

### Modern Algebra & Coding Theory
- Satisfied by:
<table>
<thead>
<tr>
<th>Course Combination</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 558 &amp; MATH 601</td>
<td>Introductory Modern Algebra and Algebraic Coding Theory</td>
</tr>
<tr>
<td></td>
<td>Numerical Methods &amp; Linear Algebra. Satisfied by:</td>
</tr>
<tr>
<td>MATH 581 &amp; MATH 591</td>
<td>Numerical Methods and Applied Numerical Linear Algebra</td>
</tr>
<tr>
<td></td>
<td>Linear Algebra. Satisfied by:</td>
</tr>
<tr>
<td>MATH 590 &amp; MATH 790</td>
<td>Linear Algebra and Linear Algebra II</td>
</tr>
<tr>
<td></td>
<td>Complex Variables &amp; Partial Differential Equations. Satisfied by:</td>
</tr>
<tr>
<td>MATH 646 &amp; MATH 647</td>
<td>Complex Variable and Applications and Applied Partial Differential Equations</td>
</tr>
<tr>
<td></td>
<td>Partial Differential Equations &amp; Calculus of Variations. Satisfied by:</td>
</tr>
<tr>
<td>MATH 647 &amp; MATH 648</td>
<td>Applied Partial Differential Equations and Calculus of Variations and Integral Equations</td>
</tr>
<tr>
<td></td>
<td>Combinatorics &amp; Graph Theory. Satisfied by:</td>
</tr>
<tr>
<td>MATH 724 &amp; MATH 725</td>
<td>Combinatorial Mathematics and Graph Theory</td>
</tr>
</tbody>
</table>

**Math Breadth (15)**

Majors must complete a minimum of 5 mathematics courses numbered 300 and above (each at least 3 credits), excluding MATH 365, 366, sequence requirements. The goals are to gain exposure to a variety of concepts and methods in mathematics, develop abstract and critical mathematics, or interdisciplinary work involving mathematics.

**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 29 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 15 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.

JUSTIFICATION
We are changing the calculus sequence from MATH 121-122-223 to MATH 125-126-127 to facilitate transfers and improve student success. The new calculus sequence is a total of 12 credit hours, while the old was 13, so this decreases the total credit hours for the degree by 1. We are considering adding another course requirement in the future, but we are not ready to do that yet.

EFFECTIVE: Fall 2015

h. Changes to Existing Major BS Chemistry

BS CHEMISTRY – change to existing major:

The following changes are to address the re-sequencing of the calculus courses.

Current

BS CHEMISTRY

Chemistry Prerequisite or Co-requisite Knowledge (27-28)

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: 5

MATH 121  Calculus I
MATH 141  Calculus I: Honors

Calculus II. Satisfied by one of the following: 5

MATH 122  Calculus II
MATH 142  Calculus II: Honors

Differential Equations. Satisfied by one of the following: 3

MATH 220  Applied Differential Equations
MATH 320  Elementary Differential Equations

Elementary Linear Algebra. Satisfied by:

MATH 290  Elementary Linear Algebra 2

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

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

PHSX 214  General Physics II Honors

New

Chemistry Prerequisite or Co-requisite Knowledge (28-30)

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: 4

MATH 121  Calculus I
MATH 125
MATH 145  Calculus I, Honors

Calculus II. Satisfied by one of the following: 4

MATH 122  Calculus II
MATH 126
MATH 146  Calculus II, Honors

Calculus III. Satisfied by one of the following: 4

MATH 127  Calculus III
MATH 147  Calculus III, Honors

Differential Equations. Satisfied by one of the following: 3

MATH 220  Applied Differential Equations
MATH 320  Elementary Differential Equations
Elementary Linear Algebra. Satisfied by:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 290</td>
<td>Elementary Linear Algebra</td>
<td>2</td>
</tr>
</tbody>
</table>

General Physics I. Satisfied by one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSX 211 &amp; PHSX 216</td>
<td>General Physics I and General Physics I Laboratory</td>
<td>5</td>
</tr>
<tr>
<td>PHSX 213</td>
<td>General Physics I Honors</td>
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</tbody>
</table>

General Physics II. Satisfied by one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PHSX 212 &amp; PHSX 236</td>
<td>General Physics II and General Physics II Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>PHSX 214</td>
<td>General Physics II Honors</td>
<td></td>
</tr>
</tbody>
</table>

**i. Changes to Existing Major to BS Math**

**PROPOSAL**

**OLD Requirements for the B.S. Degree**

<table>
<thead>
<tr>
<th>First- and Second-Year Preparation (18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 121</td>
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<tr>
<td>or MATH 141</td>
</tr>
<tr>
<td>MATH 122</td>
</tr>
<tr>
<td>or MATH 142</td>
</tr>
<tr>
<td>MATH 223</td>
</tr>
<tr>
<td>or MATH 243</td>
</tr>
<tr>
<td>MATH 290</td>
</tr>
<tr>
<td>or MATH 291</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 320</td>
<td>Elementary Differential Equations</td>
</tr>
<tr>
<td>MATH 220</td>
<td>Applied Differential Equations</td>
</tr>
<tr>
<td>MATH 221</td>
<td>Applied Differential Equations, Honors</td>
</tr>
</tbody>
</table>

**Core Requirements (12)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 590</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>MATH 500</td>
<td>Intermediate Analysis</td>
</tr>
<tr>
<td>or MATH 765</td>
<td>Mathematical Analysis I</td>
</tr>
<tr>
<td>MATH 558</td>
<td>Introductory Modern Algebra</td>
</tr>
<tr>
<td>or MATH 791</td>
<td>Modern Algebra</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 526</td>
<td>Applied Mathematical Statistics I</td>
</tr>
<tr>
<td>MATH 628</td>
<td>Mathematical Theory of Statistics</td>
</tr>
<tr>
<td>MATH 728</td>
<td>Statistical Theory</td>
</tr>
</tbody>
</table>

**Mathematics Concentration/Sequence Requirements (6-12)**

Select one 2-course sequence from List A and a second 2-course sequence from either List A or List B

**Electives (0-6)**

Select up to 2 additional 3-credit-hour courses to complete a total of 24 credit hours of mathematics courses numbered MATH 450 and above.

**Applied Concentration (8)**

3 courses, totaling at least 8 credit hours, that make significant use of mathematics. At least 2 courses must be in the same area. Course significant use of mathematics can be used for the applied concentration with the approval of a mathematics department advisor.

Note: Many of these courses have prerequisites that do not count toward the mathematics major.

**Minimum Major Requirements**

42 hours

**Applied Concentration**: 8 hours

**General Education Requirements**: 46-50 hours

**Completion of the University Core Curriculum**

**Writing (6)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>Composition (or exemption)</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 102</td>
<td>Critical Reading and Writing (or exemption)</td>
</tr>
</tbody>
</table>
### ENGL 105
Freshman Honors English (or exemption)

### Computer Science (3-4)
Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EECS 138</td>
<td>Introduction to Computing: _____</td>
</tr>
<tr>
<td>EECS 168</td>
<td>Programming I</td>
</tr>
<tr>
<td>EECS 169</td>
<td>Programming I: Honors</td>
</tr>
</tbody>
</table>

### Natural Science (7-10)
Select one course with laboratory
Select one additional course in a natural science other than mathematics

(List A, B, C left out. They stay the same. See below.)

### NEW Requirements for the B.S. Degree

#### First- and Second-Year Preparation (17)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 125</td>
<td>Calculus I</td>
</tr>
<tr>
<td>or MATH 145</td>
<td>Calculus I, Honors</td>
</tr>
<tr>
<td>MATH 126</td>
<td>Calculus II</td>
</tr>
<tr>
<td>or MATH 146</td>
<td>Calculus II, Honors</td>
</tr>
<tr>
<td>MATH 127</td>
<td>Calculus III</td>
</tr>
<tr>
<td>or MATH 147</td>
<td>Calculus III, Honors</td>
</tr>
<tr>
<td>MATH 290</td>
<td>Elementary Linear Algebra</td>
</tr>
<tr>
<td>or MATH 291</td>
<td>Elementary Linear Algebra, Honors</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 320</td>
<td>Elementary Differential Equations</td>
</tr>
<tr>
<td>MATH 220</td>
<td>Applied Differential Equations</td>
</tr>
<tr>
<td>MATH 221</td>
<td>Applied Differential Equations, Honors</td>
</tr>
</tbody>
</table>

### Core Requirements (12)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 590</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>or MATH 790</td>
<td>Linear Algebra II</td>
</tr>
</tbody>
</table>
MATH 500 Intermediate Analysis
or MATH 765 Mathematical Analysis I

MATH 558 Introductory Modern Algebra
or MATH 791 Modern Algebra

Select one of the following:

MATH 526 Applied Mathematical Statistics I
MATH 628 Mathematical Theory of Statistics
MATH 728 Statistical Theory

Mathematics Concentration/Sequence Requirements (6-12)

Select one 2-course sequence from List A and a second 2-course sequence from either List A or List B

Electives (0-6)

Select up to 2 additional 3-credit-hour courses to complete a total of 24 credit hours of mathematics courses numbered MATH 450 and

Applied Concentration (8)

3 courses, totaling at least 8 credit hours, that make significant use of mathematics. At least 2 courses must be in the same area. Course significant use of mathematics can be used for the applied concentration with the approval of a mathematics department advisor.

Note: Many of these courses have prerequisites that do not count toward the mathematics major.

Minimum Major Requirements

41 hours

Applied Concentration: 8 hours

General Education Requirements: 37 - 39 hours

Completion of the University Core Curriculum. This will generally comprise 30 credits outside the mathematics major. The list below shows Goal 2, learning outcome 1 Written communication requirement, Goal 3, natural science requirement and additional general education requirements for the BS in Mathematics.

Writing (6)

ENGL 101 Composition (or exemption)

Select one of the following:

ENGL 102 Critical Reading and Writing (or exemption)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 105</td>
<td>Freshman Honors English (or exemption)</td>
</tr>
</tbody>
</table>

**Computer Science (3-4)**

Select one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EECS 138</td>
<td>Introduction to Computing: _____</td>
</tr>
<tr>
<td>EECS 168</td>
<td>Programming I</td>
</tr>
<tr>
<td>EECS 169</td>
<td>Programming I: Honors</td>
</tr>
</tbody>
</table>

**Natural Science (7-10)**

Select one course with laboratory

Select one additional course in a natural science other than mathematics

**List A Sequences**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 627 &amp; MATH 628</td>
<td>Probability and Mathematical Theory of Statistics</td>
</tr>
<tr>
<td>MATH 660 &amp; MATH 661</td>
<td>Geometry I and Geometry II</td>
</tr>
<tr>
<td>MATH 727 &amp; MATH 728</td>
<td>Probability Theory and Statistical Theory</td>
</tr>
<tr>
<td>MATH 765 &amp; MATH 766</td>
<td>Mathematical Analysis I and Mathematical Analysis II</td>
</tr>
<tr>
<td>MATH 781 &amp; MATH 782</td>
<td>Numerical Analysis I and Numerical Analysis II</td>
</tr>
<tr>
<td>MATH 790 &amp; MATH 791</td>
<td>Linear Algebra II and Modern Algebra</td>
</tr>
</tbody>
</table>

**List B Sequences**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 500 &amp; MATH 646</td>
<td>Intermediate Analysis and Complex Variable and Applications</td>
</tr>
<tr>
<td>MATH 526 &amp; MATH 605</td>
<td>Applied Mathematical Statistics I and Applied Regression Analysis</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>MATH 526</td>
<td>Applied Mathematical Statistics I</td>
</tr>
<tr>
<td>&amp; MATH 611</td>
<td>and Time Series Analysis</td>
</tr>
<tr>
<td>MATH 540</td>
<td>Elementary Number Theory</td>
</tr>
<tr>
<td>&amp; MATH 558</td>
<td>and Introductory Modern Algebra</td>
</tr>
<tr>
<td>MATH 558</td>
<td>Introductory Modern Algebra</td>
</tr>
<tr>
<td>&amp; MATH 601</td>
<td>and Algebraic Coding Theory</td>
</tr>
<tr>
<td>MATH 540</td>
<td>Elementary Number Theory</td>
</tr>
<tr>
<td>&amp; MATH 791</td>
<td>and Modern Algebra</td>
</tr>
<tr>
<td>MATH 581</td>
<td>Numerical Methods</td>
</tr>
<tr>
<td>&amp; MATH 591</td>
<td>and Applied Numerical Linear Algebra</td>
</tr>
<tr>
<td>MATH 590</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>&amp; MATH 790</td>
<td>and Linear Algebra II</td>
</tr>
<tr>
<td>MATH 601</td>
<td>Algebraic Coding Theory</td>
</tr>
<tr>
<td>&amp; MATH 791</td>
<td>and Modern Algebra</td>
</tr>
<tr>
<td>MATH 605</td>
<td>Applied Regression Analysis</td>
</tr>
<tr>
<td>&amp; MATH 611</td>
<td>and Time Series Analysis</td>
</tr>
<tr>
<td>MATH 646</td>
<td>Complex Variable and Applications</td>
</tr>
<tr>
<td>&amp; MATH 647</td>
<td>and Applied Partial Differential Equations</td>
</tr>
<tr>
<td>MATH 646</td>
<td>Complex Variable and Applications</td>
</tr>
<tr>
<td>&amp; MATH 765</td>
<td>and Mathematical Analysis I</td>
</tr>
<tr>
<td>MATH 647</td>
<td>Applied Partial Differential Equations</td>
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<tr>
<td>&amp; MATH 648</td>
<td>and Calculus of Variations and Integral Equations</td>
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<tr>
<td>MATH 724</td>
<td>Combinatorial Mathematics</td>
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<tr>
<td>&amp; MATH 725</td>
<td>and Graph Theory</td>
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</table>

**List C Applied Concentration Courses**

**Statistics (15)**

<table>
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<tr>
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<th>Course Title</th>
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<tbody>
<tr>
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<td>MATH 611</td>
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<tr>
<td>MATH 624</td>
<td>Discrete Probability</td>
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<tr>
<td>ECON 817</td>
<td>Econometrics I</td>
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<tr>
<td>ECON 818</td>
<td>Econometrics II</td>
</tr>
<tr>
<td>ECON 526</td>
<td>Introduction to Econometrics</td>
</tr>
<tr>
<td>ECON 590</td>
<td>Game Theory</td>
</tr>
<tr>
<td>ECON 620</td>
<td>Elements of Mathematical Economics</td>
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<tr>
<td>ECON 700</td>
<td>Survey of Microeconomics</td>
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<tr>
<td>ECON 701</td>
<td>Survey of Macroeconomics</td>
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<tr>
<td>ECON 715</td>
<td>Elementary Econometrics</td>
</tr>
<tr>
<td>ECON 716</td>
<td>Econometric Forecasting</td>
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<tr>
<td>FIN 310</td>
<td>Finance</td>
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<tr>
<td>FIN 410</td>
<td>Investment Theory and Applications</td>
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<tr>
<td>FIN 415</td>
<td>Corporate Finance</td>
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<td>FIN 420</td>
<td>International Finance</td>
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<tr>
<td>FIN 425</td>
<td>Futures and Options</td>
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<td>MATH 630</td>
<td>Actuarial Mathematics</td>
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<td>Principles of Genetics</td>
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<td>BIOL 412</td>
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<td>BINF 701</td>
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<td>BINF 702</td>
<td>Bioinformatics II</td>
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<td>PHSX 313</td>
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<td>PHSX 511</td>
<td>Introductory Quantum Mechanics</td>
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<tr>
<td>PHSX 518</td>
<td>Mathematical Physics</td>
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<tr>
<td>PHSX 521</td>
<td>Mechanics I</td>
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<tr>
<td>PHSX 531</td>
<td>Electricity and Magnetism</td>
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<td>ASTR 591</td>
<td>Stellar Astronomy</td>
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<tr>
<td>ASTR 592</td>
<td>Galactic and Extragalactic Astronomy</td>
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<tr>
<td>PHSX 621</td>
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<td>PHSX 631</td>
<td>Electromagnetic Theory</td>
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<td>PHSX 655</td>
<td>Optics</td>
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<td>PHSX 671</td>
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<td>PHSX 691</td>
<td>Astrophysics I</td>
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<td>PHSX 711</td>
<td>Quantum Mechanics I</td>
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<td>CHEM 530</td>
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<td>CHEM 535</td>
<td>Physical Chemistry II</td>
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<tr>
<td>AE 345</td>
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<td>AE 445</td>
<td>Aircraft Aerodynamics and Performance</td>
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<td>AE 507</td>
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<td>AE 545</td>
<td>Fundamentals of Aerodynamics</td>
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<td>AE 550</td>
<td>Dynamics of Flight I</td>
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<tr>
<td>AE 551</td>
<td>Dynamics of Flight II</td>
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<td>AE 552</td>
<td>Honors Dynamics of Flight II</td>
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<td>Chemical and Petroleum Engineering (13)</td>
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<tr>
<td>C&amp;PE 211</td>
<td>Material and Energy Balances</td>
</tr>
<tr>
<td>C&amp;PE 511</td>
<td>Momentum Transfer</td>
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<tr>
<td>C&amp;PE 521</td>
<td>Heat Transfer</td>
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<td>Course Name</td>
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<tr>
<td>C&amp;PE 523</td>
<td>Mass Transfer</td>
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</table>

**Civil Engineering (34)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
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<td>CE 201</td>
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<tr>
<td>CE 300</td>
<td>Dynamics</td>
</tr>
<tr>
<td>CE 301</td>
<td>Statics and Dynamics</td>
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<td>CE 311</td>
<td>Strength of Materials</td>
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<td>CE 330</td>
<td>Fluid Mechanics</td>
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<td>CE 461</td>
<td>Structural Analysis</td>
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<td>CE 704</td>
<td>Dynamics and Vibrations</td>
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<td>CE 730</td>
<td>Intermediate Fluid Mechanics</td>
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<td>CE 461</td>
<td>Structural Analysis</td>
</tr>
<tr>
<td>CE 704</td>
<td>Dynamics and Vibrations</td>
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**Electrical Engineering and Computer Science (56)**

<table>
<thead>
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<th>Course Code</th>
<th>Course Name</th>
</tr>
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<tbody>
<tr>
<td>EECS 211</td>
<td>Circuits I</td>
</tr>
<tr>
<td>EECS 220</td>
<td>Electromagnetics I</td>
</tr>
<tr>
<td>EECS 360</td>
<td>Signal and System Analysis</td>
</tr>
<tr>
<td>EECS 420</td>
<td>Electromagnetics II</td>
</tr>
<tr>
<td>EECS 444</td>
<td>Control Systems</td>
</tr>
<tr>
<td>EECS 510</td>
<td>Introduction to the Theory of Computing</td>
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<tr>
<td>EECS 560</td>
<td>Data Structures</td>
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<td>EECS 562</td>
<td>Introduction to Communication Systems</td>
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<tr>
<td>EECS 638</td>
<td>Fundamentals of Expert Systems</td>
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<tr>
<td>EECS 644</td>
<td>Introduction to Digital Signal Processing</td>
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<tr>
<td>EECS 649</td>
<td>Introduction to Artificial Intelligence</td>
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<tr>
<td>EECS 660</td>
<td>Fundamentals of Computer Algorithms</td>
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<tr>
<td>EECS 662</td>
<td>Programming Languages</td>
</tr>
<tr>
<td>EECS 672</td>
<td>Introduction to Computer Graphics</td>
</tr>
<tr>
<td>EECS 718</td>
<td>Graph Algorithms</td>
</tr>
</tbody>
</table>
## Notes:

A student using at least 2 statistics courses for the applied concentration must complete MATH 627 and MATH 628 (or MATH 727 and MATH 728) as a List A sequence. (MATH 627, MATH 628, MATH 727, and MATH 728 do not count for the applied concentration.) A student using at least 2 curriculum & instruction courses for the applied concentration must complete PHSX 211 as one of the natural science courses and must complete at least 1 of the geometry courses MATH 559, MATH 660, or MATH 661.

Courses used to satisfy the core mathematics requirements can also be used to complete List A and List B sequences. However, no course can be used for 2 List A or B sequences, and courses used for the Applied Concentration requirement cannot also be counted toward the 24 credit hours of advanced mathematics courses for the B.S. degree.

Some courses satisfying the sequence requirements are taught infrequently. More advanced courses can be substituted for lower level courses in many cases. Consult the mathematics department for expected course offerings and substitutions.

### JUSTIFICATION

We are changing the calculus sequence from MATH 121-122-223 to MATH 125-126-127 to facilitate transfers and improve student success. The new calculus sequence is a total of 12 credit hours, while the old was 13, so this decreases the total credit hours for the degree by 1. We do not anticipate adding any further requirements to the BS in Mathematics.

### EFFECTIVE DATE

#### Fall 2015

**j. Changes to Existing Minor in Chemistry**

The following changes are to address the re-sequencing of the calculus courses.
Chemistry Minor: Current

Chemistry Minor Course Requirements (29-34)

Students selecting this minor must complete the following:

Calculus I. Satisfied by one of the following: 3-5
- MATH 115  Calculus I
- MATH 121  Calculus I
- MATH 141  Calculus I: Honors

Calculus II. Satisfied by one of the following: 3-5
- MATH 116  Calculus II
- MATH 122  Calculus II
- MATH 142  Calculus II: Honors

General or College 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
- PHSX 213  General Physics I Honors

General or College Physics II. Satisfied by one of the following: 4
- PHSX 115  College Physics II
- PHSX 212 & PHSX 236  General Physics II and General Physics II Laboratory
- PHSX 214  General Physics II Honors

Chemistry Minor: New

Chemistry Minor Course Requirements (29-34)

Students selecting this minor must complete the following:

Calculus I. Satisfied by one of the following: 3-5
- MATH 115  Calculus I
- MATH 121  Calculus I
- MATH 125  Calculus I
- MATH 145  Calculus I, Honors

Calculus II. Satisfied by one of the following: 3-5
- MATH 116  Calculus II
- MATH 122  Calculus II
- MATH 126  Calculus II
- MATH 146  Calculus II, Honors

General or College 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
- PHSX 213  General Physics I Honors

General or College Physics II. Satisfied by one of the following: 4
- PHSX 115  College Physics II
- PHSX 212 & PHSX 236  General Physics II and General Physics II Laboratory
- PHSX 214  General Physics II Honors
k. Changes to Existing Minor in Math

PROPOSAL

OLD Requirements for the Minor

The student must earn a grade point average of 2.0 in all mathematics courses attempted.

- **Lower-Division Preparation:** Calculus through MATH 122.
- **Upper-Division Courses:** 12 credit hours of courses numbered 300 and above (excluding MATH 365).
  
  **Note:** Most upper-division mathematics courses have MATH 223 and/or MATH 290 as prerequisites.

  Minimum Minor Requirements 18 hours

NEW Requirements for the Minor

The student must earn a grade point average of 2.0 in all mathematics courses attempted.

- **Lower-Division Preparation:** Calculus including MATH 127 or 147.
- **Upper-Division Courses:** 12 credit hours of courses numbered 300 and above (excluding MATH 365).
  
  **Note:** Most upper-division mathematics courses have MATH 290 as prerequisite.

  Minimum Minor Requirements 18 hours

JUSTIFICATION

We are changing the calculus sequence from MATH 121-122-223 to MATH 125-126-127 to facilitate transfers and improve student success. While under the old calculus sequence, students, with difficulty, could complete the minor without Vector Calculus, the redistribution of topics in the new sequence means that students must complete Calculus III to complete the minor.

EFFECTIVE: Fall 2015