

**Attachment 1**

**Academic Affairs**

**Consent Agenda Supplemental Information**

College of Human Ecology (11-12-14)

Pages 2-5

College of Arts and Sciences (2-5-15)

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**College of Human Ecology (11-12-14)**

**Non-expedited Undergraduate Curriculum Change Proposal**

**Department of Hospitality Management and Dietetics**

<p><b>Dietetics (B.S.)</b></p> <p><b>Didactic Program in Dietetics (DPD)</b></p> <p><b>Program II (Effective <del>Fall 2012</del>)</b></p> <p>The didactic program in dietetics meets the academic requirements of the Accreditation Council for Education in Nutrition and Dietetics (ACEND). After completion of this program, the graduate must obtain the 1200 hours of supervised practice experience required for eligibility to take the national Registration Examination for Dietitians. This experience must be completed through <del>one of the 242</del> accredited, post-baccalaureate dietetic <del>internships</del> in the United States. Check the ACEND <del>web page for a listing of current accredited programs.</del></p> <p>The DPD program is currently granted continuing accreditation by the Accreditation Council for Education in Nutrition and Dietetics of the Academy of Nutrition and Dietetics, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606–6995, 312-899-5400.</p> <p><b>Academic Progression</b></p> <ul style="list-style-type: none"><li>• Admission to KSU and selection of the dietetics major.</li><li>• Completion of foundational coursework and introductory professional courses.</li><li>• Application and selective admission to the didactic program.</li><li>• Completion of the didactic program advanced professional courses.</li><li>• Graduation with a Bachelor of Science degree in dietetics and Accreditation Council for Education in Nutrition and Dietetics <del>verification statement of didactic courses completed.</del></li></ul>	<p><b>Dietetics (B.S.)</b></p> <p><b>Didactic Program in Dietetics (DPD)</b></p> <p><b>Program II (Effective <u>Summer 2015</u>)</b></p> <p>The didactic program in dietetics meets the academic requirements of the Accreditation Council for Education in Nutrition and Dietetics (ACEND). After completion of this program, the graduate must obtain the 1200 hours of supervised practice experience required for eligibility to take the national Registration Examination for Dietitians. This experience must be completed through <u>an accredited</u>, post-baccalaureate dietetic <u>internship</u> in the United States. Check the ACEND <u>accredited program listings on the Academy of Nutrition and Dietetics website.</u></p> <p>The DPD program is currently granted continuing accreditation by the Accreditation Council for Education in Nutrition and Dietetics of the Academy of Nutrition and Dietetics, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606–6995, 312-899-5400.</p> <p><b>Academic Progression</b></p> <ul style="list-style-type: none"><li>• Admission to KSU and selection of the dietetics major.</li><li>• Completion of foundational coursework and introductory professional courses.</li><li>• Application and selective admission to the didactic program.</li><li>• Completion of the didactic program advanced professional courses.</li><li>• Graduation with a Bachelor of Science degree in dietetics and Accreditation Council for Education in Nutrition and Dietetics <u>Verification Statement of program completion.</u></li></ul>
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<ul style="list-style-type: none"> <li>• Apply for dietetic internship or other post-baccalaureate program.</li> </ul> <p><b>Admission to KSU and Selection of Dietetics Major</b></p> <p>Kansas State University students wishing to pursue dietetics as a career select dietetics as a major.</p> <p><b>Completion of Foundational Coursework and Professional Courses</b></p> <p>Foundational coursework includes communications, social sciences, natural sciences, quantitative studies, humanities, <u>and introductory professional courses</u>. Students must achieve an A or B grade in natural science and introductory professional courses for consideration for the didactic program. Students must achieve no grade lower than a C in communications, social sciences, quantitative studies <u>and</u> humanities courses for consideration for the didactic program.</p> <p><b>Completion of Advanced Professional Courses</b></p> <p>Advanced professional coursework includes upper level professional courses. <u>Student</u> must achieve an A or B grade in all professional courses to be considered for the didactic program.</p> <p>Students unable to meet grade expectations in the dietetics required curriculum will be not be allowed to continue in the major unless coursework is retaken to meet expectations.</p> <p><b>Application and Selective Admission to the Didactic Program</b></p> <p><u>Students apply to the didactic program three semesters prior to their anticipated date of graduation.</u></p>	<ul style="list-style-type: none"> <li>• Apply for dietetic internship or other post-baccalaureate program.</li> </ul> <p><b>Admission to KSU and Selection of Dietetics Major</b></p> <p>Kansas State University students wishing to pursue dietetics as a career select dietetics as a major.</p> <p><b>Completion of Foundational Coursework and <u>Selected</u> Professional Courses</b></p> <p>Foundational coursework includes communications, social sciences, natural <u>and physical</u> sciences, quantitative studies, humanities, <u>an integrative human ecology course, and selected introductory professional courses</u>. Students must achieve an A or B grade in natural <u>and physical</u> sciences <u>and in the selected</u> introductory professional courses for consideration for the didactic program. Students must achieve no grade lower than a C in communications, social sciences, quantitative studies, <u>humanities courses, and the integrative human ecology course</u> for consideration for the didactic program.</p> <p><b>Completion of Advanced Professional Courses</b></p> <p>Advanced professional coursework includes upper level professional courses. <u>Students</u> must achieve an A or B grade in all professional courses to be considered for the didactic program.</p> <p>Students unable to meet grade expectations in the dietetics required curriculum will be not be allowed to continue in the major unless coursework is retaken to meet expectations. <u>Professional courses may be repeated only once for the purpose of raising the grade, and must be taken the next time the course is offered.</u></p> <p><b>Application and Selective Admission to the Didactic Program</b></p> <p><u>Students must apply to the didactic program the semester immediately following completion of the following courses:</u></p> <ul style="list-style-type: none"> <li>• <u>BIOL 198 Principles of Biology</u></li> </ul>
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Admission to the didactic program is based upon grade requirements. The new grade requirements apply to students who are incoming freshman or transfer students fall 2012 and after.

Grade requirements:

1. No grade lower than a B in natural science and professional courses.
2. No grade lower than a C in all other required dietetics curriculum foundation courses.

Applications from students not meeting grade requirements will not be accepted for review.

To apply to the DPD program, students must submit to the DPD director the following:

1. Personal Statement
2. DPD application
3. Resume
4. Transcript or DARS
5. Academic Career Plan
6. Summary of Dietetics Related Work or Volunteer Experience

- BIOL 340 Human Body  
OR  
KIN 360 Anatomy & Physiology
- HMD 220 Environmental Issues in Hospitality  
OR  
BIOL 455 General Microbiology
- CHM 210 Chemistry I
- CHM 230 Chemistry II
- BIOCH 265 Introduction to Organic and Biochemistry  
OR  
CHM 350 General Organic Chemistry
- HN 132 Basic Nutrition
- HN 400 Human Nutrition
- HMD 341 Principles of Food Production Management

Grade Requirements:

1. Students must have an overall GPA of 3.0 or above. This includes all coursework taken at any time in the individual's undergraduate or graduate educational career prior to applying for DPD admission.
2. No grade lower than a B in natural science or professional courses.
3. No grade lower than a C in all other required dietetics curriculum foundation courses.

Applications from students not meeting grade requirements will not be accepted for review.

To apply to the DPD program, students must submit the following to the DPD director:

1. DPD application form
2. Current DARS report generated through iSIS.
3. Academic plan showing when remaining courses will be completed.
4. Grade calculation spreadsheets showing calculations for overall GPA, science course GPA, and professional course GPA.
5. Current 1-page resume which includes: Education with location and inclusive dates

	<p>Paid work experience (dietetics or non-dietetics related) with locations and inclusive dates</p> <p>Volunteer experience (dietetics or non-dietetics-related) with locations and inclusive dates</p> <p>Significant honors/awards</p> <p>6. A personal statement (maximum of 1000 words) outlining interest in dietetics, professional goals, why the DPD was chosen, strengths, and areas for improvement.</p> <p>Applicants will also participate in an interview, conducted via videoconferencing, with the admissions committee. A scoring matrix for evaluation of the application and interview performance will be made available to applicants in the DPD Student Handbook.</p> <p>Progression in the program will require continued maintenance of at least a 3.0 GPA with no grade less than a B in the sciences or professional courses. A required course may be repeated only once in order to raise a grade to B or better. The course to be repeated must be retaken the next time that course is offered.</p> <p>If a B or better is not obtained in the repeated course, the student will be dismissed from the DPD and must seek a different major.</p>
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**Rationale:** Changes to the admission requirements and procedure for the Didactic Program in Dietetics (DPD) will better align the KSU program with expectations of post-baccalaureate dietetic internships and make KSU graduates more competitive in the selection process.

**Impact:** Department of Human Nutrition notified on 9/12/2014, no response.

**Effective Term:** Summer 2015

**College of Arts and Sciences (2-5-15)**

**NON-EXPEDITED COURSE PROPOSALS**

**Courses Numbered 000-599**

**American Ethnic Studies**

FROM: AMETH 450 – ~~Comparative Ethnic Studies II. (3) I, II, S. A comparative introduction to cultural forms including literature, music, theater, folklore, media arts, and oral history from a variety of U.S. ethnic groups. An analysis of how race and ethnicity intersect with gender, sexuality, and social class, and how systems of power and inequality are constructed, reinforced, and challenged.~~ Pr.: AMETH 160. K-State 8: ~~Aesthetic Interpretation; Human Diversity within the US.~~

TO: AMETH 450 – Comparative Ethnic Studies. (3) I, II, S. Provides a comparative framework for understanding both the specificities within and the differences between the situations of racially marginalized groups in the U.S. and beyond. Pr.: AMETH 160. K-State 8: Human Diversity within the US; Global Issues and Perspectives.

K-State 8 RATIONALE: Course compares ethnic and racialized groups within and outside the U.S. from a socio-historical perspective.

RATIONALE: To merge Comparative Ethnic Studies I and II into a new course, which consists of a new course description and objectives.

IMPACT: None

EFFECTIVE DATE: Fall 2015

ADD: AMETH 461 – Transformative Thought. (3) I, II, S. Engages a range of advanced theories and critical concepts in American Ethnic Studies, including the intersections of race, ethnicity, gender, class, indigeneity, (dis)ability, citizenship, and sexuality. K-State 8: Human Diversity within the US; Ethical Reasoning and Responsibility.

K-State 8 RATIONALE: This course will assist students in developing a heightened awareness of how diverse ethnicities and racial formations shape their sense of self in relation to diverse others. This course offers multiple critical lenses through which students must come to understand the world around them and how differently located perspectives require suspending assumptions and

applying others that alter one's sense of justice, crime, resistance, ethics and truth.

RATIONALE: This course is being added as a necessary step in the required coursework for the major to introduce students to advanced theoretical perspectives in the field of American Ethnic Studies. The course builds toward the two-course "capstone" sequence (AMETH 550 and AMETH 650) and will prepare students to formulate critical research questions and pursue advanced research methods with an American Ethnic Study lens.

IMPACT: None

EFFECTIVE DATE: Fall 2015

FROM: ~~AMETH 550 – Research Methods in American Ethnic Studies. (3) I. This course provides a broad overview of social research methods pertinent to the study of ethnicity and culture. Students will be introduced to qualitative and quantitative methods of research, including oral history interviews, ethnographic observation/field research, surveys, and experimentation. Pr.: AMETH 160, AMETH 459, AMETH 450. K-State 8: Empirical and Quantitative Reasoning.~~

TO: AMETH 550 – Popular Paths to Knowledge. (3) I, II, S. Introduction to decolonial methodologies, participatory action research, popular education, and oral histories. Students will generate a prospectus for an independent research project that will be completed in the capstone seminar. Pr.: AMETH 160. K-State 8: Empirical and Quantitative Reasoning; Social Sciences.

K-State 8 RATIONALE: This course interrogates and applies empirical and quantitative research methods within the social sciences and the humanities.

RATIONALE: The current title "Research Methods in American Ethnic Studies" is not an accurate reference for the current course content and approach. This prerequisite for AMETH 660 (senior capstone) critiques traditional scientific quantitative research methods and introduces students to the rigor of qualitative study of knowledge generated in the voices, needs, concerns and perspectives of the underserved majority. These paths to knowledge are more accurately understood in American Ethnic Studies as "popular" (in terms of the Latin phrase *vox populi*, translated as "voices of the people") than as "research methods", which could imply traditional quantitative inquiry only.

IMPACT: None

EFFECTIVE DATE: Fall 2016

## Dean of Arts and Sciences

ADD: DAS 195 – CAT Community Connections. (1-3) I, II. Interdisciplinary course that explores the connections among two different fields, courses, or disciplines. For first-year students enrolled in a specific CAT Community linked to the College of Arts and Sciences.

RATIONALE: We've been using DAS 199 Selected Topics number for this course since 2010. The CAT Communities are now well established, with 34 planned for 2015-16. The course needs its own permanent course designation in the catalog.

IMPACT: None. Colleges of Architecture, Planning and Design, Agriculture, Business Administration, Human Ecology, and Engineering were contacted. Colleges of Business, Agriculture, Human Ecology and Architecture, Planning and Design have all approved the addition of this course. There has been no response from the College of Engineering.

EFFECTIVE DATE: Fall 2015

## Geology

FROM: GEOL 103 – Geology Laboratory. (1) I, II, S. ~~Field and laboratory investigation of minerals, rocks, and fossils; use of maps; environmental studies, erosion, transportation, sedimentation. K-State 8: Empirical and Quantitative Reasoning.~~ Natural and Physical Sciences. Pr. or CoR: GEOL 100, GEOL 102, ~~GEOL 105~~, GEOL 125.

TO: GEOL 103 – Geology Laboratory. (1) I, II, S. Laboratory investigation of rocks and minerals; use of geologic and topographic maps; understanding of stream and groundwater processes and landforms. K-State 8: Natural and Physical Sciences. Pr. or CoR: GEOL 100, GEOL 102, or GEOL 125.

RATIONALE: The change is being made in response to recommendations of an external curriculum review. The GEOL 103 lab activities were viewed as too remote from the course content for GEOL 105 (Oceanography) to make this a viable pre- or co-requisite.

IMPACT: This change should have minimal impact on other departments.

EFFECTIVE DATE: Fall 2015



## History

**ADD:** HIST 549 – Modern Africa from 1850. (3) I, II, or S. Introduction to modern African history since 1850. Key topics include the establishment and impact of the colonial empires that dominated Africa between the 1880s and 1960s; the process of decolonization; African responses to colonial rule; and the development of post-Independence Africa with a special emphasis on the challenges faced by African countries. Pr.: Sophomore standing recommended. K-State 8: Global Issues and Perspectives; Historical Perspectives.

**K-State 8 Rationale:** The course explores Africa on a world stage, and therefore speaks to global issues while focusing on the history of the region.

**RATIONALE:** The department does not currently offer a course focused on African history. In addition to expanding the department's geographical coverage to include a currently uncovered region that has over 1 billion people, this class will complement existing strengths in European, Asian history, and Middle Eastern history through its focus on imperialism and its effects. It will count toward the "non-western" history overlay within the major, a category that is critical to our major providing diverse subject matter.

**IMPACT:** No Impact.

**EFFECTIVE DATE:** Fall 2015

## Sociology, Anthropology, and Social Work

**ADD:** SOCIO 540 – Sexuality and Society. (3) S. Overview of key concepts related to sexuality studies and examination of social and cultural constructions of sexuality. Discussion of issues of power, inequalities, and social control. Pr.: SOCIO 211. K-State 8: Social Sciences; Human Diversity within the US.

**K-State 8 RATIONALE:** This is a course in sociology of sexuality, and it is closely related to social sciences. The course extensively covers the topic of human diversity in terms of sexuality.

**RATIONALE:** The proposed course is directly related to strategic goals of Sociology program. Since one of our areas of specialization is sociology of gender and inequalities, it is reasonable and beneficial to add a sociological course on sexuality to our existing curriculum. This upper undergraduate course will give students more options in crafting their educational careers. The course can be a part of the Interdisciplinary Social Science degree offered by KSU. Finally, this course will contribute to K-State's thematic goal of undergraduate

educational experience by providing an interesting and innovative course on sociology of sexuality.

IMPACT: The course will primarily focus on sociological aspects of sexuality studies and will not impact other programs or units.

EFFECTIVE DATE: Summer 2015

# NON-EXPEDITED CURRICULUM PROPOSALS

## Undergraduate

### American Ethnic Studies Minor

FROM:

TO:

<p><b>Program requirements</b></p> <hr/> <p>Students completing 15 credit hours of course work in a <del>minimum of two departments</del> may earn a minor in American ethnic studies. Students pursuing a minor are advised in the American Ethnic Studies office.</p> <p><b>Course requirements for the minor</b></p> <hr/> <ul style="list-style-type: none"> <li>• See the list of electives for the <del>AMETH major</del> <b>Credits: (9)</b></li> <li>• <del>AMETH 160 – Introduction to American Ethnic Studies</del> <b>Credits: (3)</b></li> <li>• <del>ANTH 200 – Introduction to Cultural Anthropology</del> <b>Credits: (3)</b></li> <li>• <del>or</del></li> <li>• <del>ANTH 210 – Introduction to Cultural Anthropology, Honors</del> <b>Credits: (3)</b></li> </ul> <p><b>Total credit hours: (15)</b></p>	<p><b>Program requirements</b></p> <hr/> <p>Students completing 15 credit hours of course work may earn a minor in American Ethnic Studies. <u>The course requirements are:</u></p> <p><u>Required Core (6 credit hours)</u></p> <p><u>AMETH 160 – Introduction to American Ethnic Studies</u> <b>Credits: (3)</b></p> <p><u>AMETH 351 – African American Perspectives</u> <b>Credits: (3)</b></p> <p><u>Or</u></p> <p><u>AMETH 352 – American Indian Perspectives</u> <b>Credits: (3)</b></p> <p><u>Or</u></p> <p><u>AMETH 353 – Latina/o Perspectives</u> <b>Credits: (3)</b></p> <p><u>Or</u></p> <p><u>AMETH 354 – Asian American Perspectives</u> <b>Credits: (3)</b></p> <p><u>Electives (9 credit hours)</u></p> <p><u>Any three additional courses within AMETH</u></p> <p>TOTAL credit hours: (15)</p> <p><u>American Ethnic Studies emerged in universities as a response to a community-based demand from civil rights movements to include the perspectives of communities of color historically erased, socially dismissed, and institutionally underrepresented. A minor in American Ethnic Studies teaches university students to think critically about the multifaceted realities and</u></p>
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	<u>identities of Americas' diverse ethnicities; promotes social justice ideals and practices of inclusivity; fosters community-based engaged research and praxis responsive to the needs and realities of underserved constituencies; and foregrounds the needs, concerns, and knowledge of historically underrepresented peoples of color in Kansas.</u>
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RATIONALE: Revised curriculum and updated minor description and requirements.

IMPACT: None

EFFECTIVE DATE: Fall 2015

## Biochemistry and Molecular Biophysics

B.A. in Biochemistry

FROM:

TO:

<p>Biochemistry seeks to understand the molecular events of life processes. It applies chemical and physical techniques to elucidate the structure and organization of molecules, particularly macromolecules that are responsible for the structural organization as well as operation and control of all cellular processes. The emerging knowledge has broad importance and consequences for all areas of the life sciences.</p> <p>Bachelor's degree requirements General requirements for undergraduate major: <del>A total of 120 credit hours are required for graduation.</del> The BA program is obtained by following the curriculum of the College of Arts and Sciences. To graduate, a student must have a grade of C or better in all science and mathematics courses required for the degree, including transfer courses, as specified below. In addition, to graduate a student must have a 2.2 GPA in required science and mathematics courses taken at K-State.</p>	<p>Biochemistry seeks to understand the molecular events of life processes. It applies chemical and physical techniques to elucidate the structure and organization of molecules, particularly macromolecules that are responsible for the structural organization as well as operation and control of all cellular processes. The emerging knowledge has broad importance and consequences for all areas of the life sciences.</p> <p><b>Bachelor's degree requirements</b> General requirements for undergraduate major: <u>A total of 121 credit hours are required for graduation.</u> The BA program is obtained by following the curriculum of the College of Arts and Sciences. To graduate, a student must have a grade of C or better in all science and mathematics courses required for the degree, including transfer courses, as specified below. In addition, to graduate a student must have a 2.2 GPA in required science and mathematics courses taken at K-State.</p>
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<p>BIOCH 110 Biochem &amp; Society Credits (3)          BIOCH521 Gen Biochemistry Credits (3)          BIOCH522 Gen Biochemistry Lab Credits (2)          BIOCH 755 - Biochemistry I Credits: (3)          BIOCH 765 - Biochemistry II Credits: (3)</p> <p>BIOL 198 - Principles of Biology Credits: (4)          BIOL450 Modern Genetics Credits: (4)          BIOL455 General Microbiology Credits: (4)          BIOL541 Cell Biology Credits: (3)</p> <p>CHM 210 - Chemistry I Credits: (4)          CHM 230 - Chemistry II Credits: (4)          CHM 371 - Chemical Analysis Credits: (4)          CHM350 Gen Org Chem Credits: (3)          CHM351 Gen Org Lab Credits: (2)</p> <p>MATH 220 - Analytic Geometry and Calculus Credits: (4)          MATH 221 - Analytic Geometry and Calculus II Credits: (4)</p> <p>PHYS 113 - General Physics I Credits: (4)          PHYS 114 - General Physics II Credits: (4)</p> <p>STAT703 Stat Methods for Nat Scientists Credits (3)</p> <p><del>*Upper division biochemistry, chemistry, biological science, statistics, computer science, analytical geometry and calculus III, or differential equations elective Credits: (19)</del></p> <p>Note: These courses satisfy the mathematics and natural science requirements shown in the general requirements for the BA degree.</p> <p>A&amp;S requirements Credits (32)          Level 4 Foreign language Credits (4)</p> <p><del>Total hours required for graduation (120 credit hours)</del></p>	<p>BIOCH 110 Biochem &amp; Society Credits (3)          BIOCH521 Gen Biochemistry Credits (3)          BIOCH522 Gen Biochemistry Lab Credits (2)          BIOCH 755 - Biochemistry I Credits: (3)          BIOCH 765 - Biochemistry II Credits: (3)</p> <p>BIOL 198 - Principles of Biology Credits: (4)          BIOL450 Modern Genetics Credits: (4)          BIOL455 General Microbiology Credits: (4)          BIOL541 Cell Biology Credits: (3)</p> <p>CHM 210 - Chemistry I Credits: (4)          CHM 230 - Chemistry II Credits: (4)          CHM 371 - Chemical Analysis Credits: (4)          CHM350 Gen Org Chem Credits: (3)          CHM351 Gen Org Lab Credits: (2)</p> <p>MATH 220 - Analytic Geometry and Calculus Credits: (4)          MATH 221 - Analytic Geometry and Calculus II Credits: (4)</p> <p>PHYS 113 - General Physics I Credits: (4)          PHYS 114 - General Physics II Credits: (4)</p> <p>STAT703 Stat Methods for Nat Scientists Credits (3)</p> <p><u>*Any upper division elective credits in any College (20)</u></p> <p>Note: These courses satisfy the mathematics and natural science requirements shown in the general requirements for the BA degree.</p> <p>A&amp;S requirements Credits (32)          Level 4 Foreign language Credits (4)</p> <p><u>Total hours required for graduation (121 credit hours)</u></p>
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**RATIONALE:** Biochemistry and Molecular Biophysics seeks approval for the modification of its basic B.A. degree program. After input from students in our programs, and ensuing faculty discussions, we propose to change the upper division elective requirements (20

credits) in this curriculum, opening them to include any upper division elective credits in any College. We find this change more consistent with the broad academic scope of a Bachelor of Arts degree, and suggest that it will also facilitate the achievement of dual major degrees by students with more diverse or complex academic adjectives.

**IMPACT:** The changes potentially involve additional enrollment in classes from other departments and colleges across the K-State campus. But, BMB currently has 85 undergraduate majors, so we do not expect a dramatic increase in any specific classes. Aside from these ramifications we do anticipate that changes will affect other units. Colleges across campus have been notified.

**EFFECTIVE DATE:** Fall 2015

**B.A. in Biochemistry, Medical Biochemistry Track**

**FROM:**

**TO:**

<p>Biochemistry seeks to understand the molecular events of life processes. It applies chemical and physical techniques to elucidate the structure and organization of molecules, particularly macromolecules that are responsible for the structural organization as well as operation and control of all cellular processes. The emerging knowledge has broad importance and consequences for all areas of the life sciences.</p> <p><b>Bachelor’s degree requirements</b> General requirements for undergraduate major: A total of 121 credit hours are required for graduation. The BA program, Medical Track, is obtained by following the curriculum of the College of Arts and Sciences.</p> <p>To graduate, a student must have a grade of C or better in all science and mathematics courses required for the degree, including transfer courses, as specified below. In addition, to graduate a student must have a 2.2 GPA in required science and mathematics courses taken at K-State.</p> <p>BIOCH 110 Biochem &amp; Society Credits (3) BIOCH 521 - Gen Biochemistry Credits (3) BIOCH 522 - Gen Biochemistry Lab Credits (2) BIOCH 571 - Medical Biochemistry Credits: (3)</p>	<p>Biochemistry seeks to understand the molecular events of life processes. It applies chemical and physical techniques to elucidate the structure and organization of molecules, particularly macromolecules that are responsible for the structural organization as well as operation and control of all cellular processes. The emerging knowledge has broad importance and consequences for all areas of the life sciences.</p> <p><b>Bachelor’s degree requirements</b> General requirements for undergraduate major: A total of 121 credit hours are required for graduation. The BA program, Medical Track, is obtained by following the curriculum of the College of Arts and Sciences.</p> <p>To graduate, a student must have a grade of C or better in all science and mathematics courses required for the degree, including transfer courses, as specified below. In addition, to graduate a student must have a 2.2 GPA in required science and mathematics courses taken at K-State.</p> <p>BIOCH 110 Biochem &amp; Society Credits (3) BIOCH 521 - Gen Biochemistry Credits (3) BIOCH 522 - Gen Biochemistry Lab Credits (2) BIOCH 571 - Medical Biochemistry Credits: (3)</p>
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<p>{BIOCH 755 Biochemistry I: (3)}# {BIOCH 799 Biochemistry Research (1-3)} #</p> <p>BIOL 198 - Principles of Biology Credits: (4) BIOL 450 Modern Genetics Credits: (4) BIOL 455 General Microbiology Credits: (4) BIOL 541 Cell Biology Credits: (3) BIOL 670 Immunology (4)</p> <p>CHM 210 - Chemistry I Credits: (4) CHM 230 - Chemistry II Credits: (4) CHM 371 - Chemical Analysis Credits: (4) CHM 350 - Gen Org Chem Credits: (3) CHM 351 - Gen Org Lab Credits: (2)</p> <p>MATH 220 - Analytic Geometry and Calculus Credits: (4)</p> <p>PHYS 113 - General Physics I Credits: (4) PHYS 114 - General Physics II Credits: (4)</p> <p>STAT 340 Biometrics I Credits (3) (STAT 341 Biometrics I: credits (3)) #</p> <p><del>*Upper division biochemistry, chemistry, biological science, statistics, computer science, analytical geometry and calculus III, or differential equations elective Credits: (20)</del></p> <p># The Medical Biochemistry BA plan requires one of the following three classes: STAT 341 (Biometrics II), BIOCH 755 (Biochemistry I) or BIOCH 799 (Biochemistry Research).</p> <p>Note: The courses above satisfy the mathematics and natural science requirements shown in the general requirements for the BA degree.</p> <p>A&amp;S requirements Credits (32) For BA degree: Level 4 Foreign language Credits (4)</p> <p>Total hours required for graduation (121 credit hours)</p>	<p>{BIOCH 755 Biochemistry I: (3)}# {BIOCH 799 Biochemistry Research (1-3)} #</p> <p>BIOL 198 - Principles of Biology Credits: (4) BIOL 450 Modern Genetics Credits: (4) BIOL 455 General Microbiology Credits: (4) BIOL 541 Cell Biology Credits: (3) BIOL 670 Immunology (4)</p> <p>CHM 210 - Chemistry I Credits: (4) CHM 230 - Chemistry II Credits: (4) CHM 371 - Chemical Analysis Credits: (4) CHM 350 - Gen Org Chem Credits: (3) CHM 351 - Gen Org Lab Credits: (2)</p> <p>MATH 220 - Analytic Geometry and Calculus Credits: (4)</p> <p>PHYS 113 - General Physics I Credits: (4) PHYS 114 - General Physics II Credits: (4)</p> <p>STAT 340 Biometrics I Credits (3) (STAT 341 Biometrics I: credits (3)) #</p> <p><u>**Any upper division elective credits in any College (20)</u></p> <p># The Medical Biochemistry BA plan requires one of the following three classes: STAT 341 (Biometrics II), BIOCH 755 (Biochemistry I) or BIOCH 799 (Biochemistry Research).</p> <p>Note: The courses above satisfy the mathematics and natural science requirements shown in the general requirements for the BA degree.</p> <p>A&amp;S requirements Credits (32) For BA degree: Level 4 Foreign language Credits (4)</p> <p>Total hours required for graduation (121 credit hours)</p>
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RATIONLE: Biochemistry and Molecular Biophysics (BMB) seeks to modify the existing B.A.degree in Biochemistry, Medical Biochemistry Track. This program was

created in 2012 to provide a framework for students who require specialized training in biochemistry in preparation for careers in medicine or related fields. BMB faculty designed the program following recommendations of the American Association of Medical Colleges (AAMC) and the American Society of Biochemistry and Molecular Biology (ASBMB). After input from students in our programs, and ensuing faculty discussions, we propose to change the upper division elective requirements (20 credits) in this curriculum, opening them to include any upper division elective credits in any College. We find this change more consistent with the broad academic scope of a Bachelor of Arts degree, and suggest that it will also facilitate the achievement of dual major degrees by students with more diverse or complex academic adjectives.

**IMPACT:** The changes potentially involve additional enrollment in classes from other departments and colleges across the K-State campus. But, BMB currently has 85 undergraduate majors, so we do not expect a dramatic increase in any specific classes. Aside from these ramifications we do anticipate that changes will affect other units. Colleges across campus have been notified.

**EFFECTIVE DATE:** Fall 2015

## Biology

Microbiology B.A./B.S.

**FROM:**

**TO:**

FROM:	TO:
<p><b>Bachelor's degree requirements</b></p> <p><b>Block A: Courses offered by other departments</b></p> <hr/> <ul style="list-style-type: none"> <li>• BIOCH 521 – General Biochemistry <b>Credits:</b> (3)</li> <li>• CHM 210 – Chemistry I <b>Credits:</b> (4)</li> <li>• CHM 230 – Chemistry II <b>Credits:</b> (4)</li> <li>• CHM 350 – General Organic Chemistry <b>Credits:</b> (3)</li> <li>• CHM 351 – General Organic Chemistry Laboratory <b>Credits:</b> (2)</li> <li>• MATH 220 – Analytic Geometry and Calculus I <b>Credits:</b> (4)</li> <li>• PHYS 113 – General Physics I <b>Credits:</b> (4)</li> <li>• PHYS 114 – General Physics II <b>Credits:</b> (4)</li> </ul>	<p><b>Bachelor's degree requirements</b></p> <p><b>Block A: Courses offered by other departments</b></p> <hr/> <ul style="list-style-type: none"> <li>• BIOCH 521 – General Biochemistry <b>Credits:</b> (3)</li> <li>• CHM 210 – Chemistry I <b>Credits:</b> (4)</li> <li>• CHM 230 – Chemistry II <b>Credits:</b> (4)</li> <li>• CHM 350 – General Organic Chemistry <b>Credits:</b> (3)</li> <li>• CHM 351 – General Organic Chemistry Laboratory <b>Credits:</b> (2)</li> <li>• MATH 220 – Analytic Geometry and Calculus I <b>Credits:</b> (4)</li> <li>• <u>Class chosen from STAT 325, 340, 701, 703; MATH 221, 551, 615; CIS 111, 200</u> <b>Credits:</b> (3-4)</li> </ul>



<p><b>Note:</b></p> <hr/> <p>Prerequisites for MATH 220 are:</p> <ul style="list-style-type: none"> <li>• MATH 100 and MATH 150</li> <li>• or four semesters of high school algebra and one semester of trigonometry plus appropriate math placement exam scores</li> </ul> <p>Upon consultation with a Division of Biology advisor a student may substitute:</p> <ul style="list-style-type: none"> <li>• Biochemistry I (BIOCH 755) and II (BIOCH 765) for General Biochemistry (BIOCH 521)</li> <li>• Organic Chemistry I (CHM 531) and II (CHM 550) for General Organic Chemistry (CHM 350)</li> <li>• Organic Chemistry I Lab (CHM 532) for General Organic Chemistry Lab (CHM 351) and</li> <li>• Engineering Physics I (PHYS 213) and II (PHYS 214) for General Physics I (PHYS 113) and II (PHYS 114)</li> </ul> <p><b>Block B: Division of biology courses</b></p> <hr/>	<ul style="list-style-type: none"> <li>• PHYS 113 – General Physics I Credits: (4)</li> <li>• PHYS 114 – General Physics II Credits: (4)</li> </ul> <p><b>Note:</b></p> <hr/> <p>Prerequisites for MATH 220 are:</p> <ul style="list-style-type: none"> <li>• MATH 100 and MATH 150</li> <li>• or four semesters of high school algebra and one semester of trigonometry plus appropriate math placement exam scores</li> </ul> <p>Upon consultation with a Division of Biology advisor a student may substitute:</p> <ul style="list-style-type: none"> <li>• Biochemistry I (BIOCH 755) and II (BIOCH 765) for General Biochemistry (BIOCH 521)</li> <li>• Organic Chemistry I (CHM 531) and II (CHM 550) for General Organic Chemistry (CHM 350)</li> <li>• Organic Chemistry I Lab (CHM 532) for General Organic Chemistry Lab (CHM 351) and</li> <li>• Engineering Physics I (PHYS 213) and II (PHYS 214) for General Physics I (PHYS 113) and II (PHYS 114)</li> </ul> <p><b>Block B: Division of biology courses</b></p> <hr/>
<ul style="list-style-type: none"> <li>• BIOL 198 – Principles of Biology Credits: (4)</li> <li>• BIOL 450 – Modern Genetics Credits: (4)</li> <li>• BIOL 455 – General Microbiology Credits: (4)</li> <li>• BIOL 541 – Cell Biology Credits: (3)</li> <li>• BIOL 670 – Immunology Credits: (4)</li> <li>• BIOL 675 – Genetics of Microorganisms Credits: (3)</li> </ul> <p><b>Block C: Microbiology major electives</b></p> <hr/>	<ul style="list-style-type: none"> <li>• BIOL 198 – Principles of Biology Credits: (4)</li> <li>• BIOL 450 – Modern Genetics Credits: (4)</li> <li>• BIOL 455 – General Microbiology Credits: (4)</li> <li>• BIOL 541 – Cell Biology Credits: (3)</li> <li>• BIOL 670 – Immunology Credits: (4)</li> <li>• BIOL 675 – Genetics of Microorganisms Credits: (3)</li> <li>• BIOL 687 – Microbial Ecology Credits: (3)</li> </ul>

Students must take an *additional 13 credit hours* from courses listed below. At least *7 of the 13 credit hours must be laboratory courses.*

- AGRON 645 – Soil Microbiology **Credits:** (3)
- AGRON 646 – Soil Microbiology Laboratory **Credits:** (1)
- BIOL 410 – Biology of the Cancer Cell **Credits:** (2)
- BIOL 495 – Topics in Biology **Credits:** (1–6) (1–3 credit hours)
- or
- BIOL 697 – Topics in Biology **Credits:** (1–6) (1–3 credit hours)
- BIOL 530 – Pathogenic Microbiology **Credits:** (3) (lab course)
- BIOL 545 – Human Parasitology **Credits:** (3)
- BIOL 546 – Human Parasitology Laboratory **Credits:** (1)
- BIOL 604 – Biology of the Fungi **Credits:** (3) (lab course)
- BIOL 609 – Cellular and Molecular Biology of Human Diseases **Credits:** (3)
- BIOL 625 – Animal Parasitology **Credits:** (4) (lab course)
- BIOL 671 – Immunology Lab **Credits:** (2)
- BIOL 676 – Molecular Genetics Laboratory **Credits:** (3)
- ~~BIOL 687 – Microbial Ecology **Credits:** (3)~~
- BIOL 690 – Microbial Physiology and Metabolism **Credits:** (2)
- BIOL 698 – Problems in Biology **Credits:** (1–8) (lab course) (1–3 credit hours)
- BIOL 705 – Eukaryotic Genetics **Credits:** (3)
- BIOL 707 – Advanced Cell Biology **Credits:** (3)
- BIOL 730 – General Virology **Credits:** (3)
- BIOL 731 – Virology Laboratory **Credits:** (2)
- FDSCI 600 – Food Microbiology **Credits:** (2)

### Block C: Microbiology major electives

Students must take an *additional 10 credit hours* from courses listed below. Five to 10 hours from List 1 can be applied to this requirement. Up to 5 hours from List 2 can be applied to this requirements. At least *5 of the 10 credit hours must be laboratory credits.*

#### List 1:

- AGRON 645 – Soil Microbiology **Credits:** (3)
- AGRON 646 – Soil Microbiology Laboratory **Credits:** (1)
- BIOL 410 – Biology of the Cancer Cell **Credits:** (2)
- BIOL 495 – Topics in Biology **Credits:** (1–6) (1–3 credit hours)
- or
- BIOL 697 – Topics in Biology **Credits:** (1–6) (1–3 credit hours)
- BIOL 520 – Evolution **Credits:** (3)
- BIOL 530 – Pathogenic Microbiology **Credits:** (3) (lab course)
- BIOL 545 – Human Parasitology **Credits:** (3)
- BIOL 546 – Human Parasitology Laboratory **Credits:** (1)
- BIOL 604 – Biology of the Fungi **Credits:** (3) (lab course)
- BIOL 609 – Cellular and Molecular Biology of Human Diseases **Credits:** (3)
- BIOL 625 – Animal Parasitology **Credits:** (4) (lab course)
- BIOL 671 – Immunology Lab **Credits:** (2)
- BIOL 676 – Molecular Genetics Laboratory **Credits:** (3)
- BIOL 687 – Microbial Ecology **Credits:** (3)

- FDSCI 601 – Food Microbiology  
Lab Credits: (2)

**Note:**

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By consultation with a Division of Biology advisor a student may choose elective courses from Block C that allow a more specific focus on interest and experience. Areas of specialization would include prokaryotic microbiology, eukaryotic microbiology, biotechnology/genetic engineering, and infectious diseases. The microbiology curriculum coupled with appropriate electives provides an excellent education base for students moving directly into the job market, for students headed toward medical, dental, medical technology, and veterinary programs, and for students going into graduate programs in the biological sciences.

**Total credit hours required for graduation: (120)**

- BIOL 690 – Microbial Physiology and Metabolism Credits: (2)
- BIOL 698 – Problems in Biology Credits: (1–8) (lab course) (1–3 credit hours)
- BIOL 705 – Eukaryotic Genetics Credits: (3)
- BIOL 707 – Advanced Cell Biology Credits: (3)
- BIOL 730 – General Virology Credits: (3)
- BIOL 731 – Virology Laboratory Credits: (2)
- FDSCI 600 – Food Microbiology Credits: (2)
- FDSCI 601 – Food Microbiology Lab Credits: (2)

List 2:

- ASI 540 – Principles of Animal Disease Control Credits: (3)
- ASI 720 – Anaerobic Bacteriology Credits: (2)
- BIOCH 522 – General Biochemistry Laboratory Credits: (2)
- BIOCH 571 – Medical Biochemistry Credits: (3)
- BIOCH 756 – Biochemistry 1 Laboratory Credits: (2)
- BIOCH 766 – Recombinant DNA Laboratory I Credits: (1)
- BIOCH 767 – Recombinant DNA Laboratory II Credits: (1)
- BIOCH 775 – Molecular Biophysics Credits: (3)
- DMP 705 – Principles of Veterinary Immunology Credits: (2)
- DMP 708 – Veterinary Epidemiology Credits: (2)
- DMP 712 – Veterinary Bacteriology and Mycology – Lecture Credits: (3)
- DMP 754 – Introduction to Epidemiology Credits: (3)
- DMP 770 – Emerging Diseases Credits: (3)
- PLPTH 500 – Principles of Plant Pathology Credits: (2)

	<ul style="list-style-type: none"> <li>• <u>PLPTH 585 – Crop Diseases Credits: (2)</u></li> <li>• <u>PLPTH 610 – Biotechnology Credits: (3)</u></li> <li>• <u>PLPTH 611 – Agricultural Biotechnology Laboratory Credits: (2)</u></li> <li>• <u>PLPTH 612 – Genomics Applications Credits: (3)</u></li> <li>• <u>PLPTH 613 – Bioinformatics Applications Credits: (2)</u></li> </ul> <p><b>Note:</b></p> <hr/> <p>By consultation with a Division of Biology advisor a student may choose elective courses from Block C that allow a more specific focus on interest and experience. Areas of specialization would include prokaryotic microbiology, eukaryotic microbiology, biotechnology/genetic engineering, and infectious diseases. The microbiology curriculum coupled with appropriate electives provides an excellent education base for students moving directly into the job market, for students headed toward medical, dental, medical technology, and veterinary programs, and for students going into graduate programs in the biological sciences.</p> <p><b>Total credit hours required for graduation: (120)</b></p>
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**RATIONALE:** Addition of a quantitative requirement (statics, computer science, or math) will better prepare students for the current requirements in microbiology. It also brings Microbiology curriculum in line with the quantitative requirements already approved for the Biology major.

Addition of Microbial Ecology, BIOL 687, to Block B will provide students with more knowledge and appreciation for microbes and their interactions in natural environments. This is important in understanding the evolution of microbes that interact with other organisms including plants, animals, and human. This course is required by many peer institutions and is recommended as a core course in undergraduate Microbiology curricula by the American Society of Microbiology.

The number of credits of required elective courses and electives lab credits (Block C) are reduced (by 3 and 2, respectively) to accommodate the additions to the curriculum.

Additional flexibility in electives (List 2 in Block C) is provided to offset the overall 3-credit addition to the required curriculum and to allow students to tailor the curriculum to their interests. The added classes, BIOL 520, Evolution in List A and the courses from other departments in List B, are all very appropriate in content as microbiology electives.

IMPACT: Mathematics, Statistics, Biochemistry, Plant Pathology, Animal Science, and Computing and Information Systems departments have been contacted and have all given approval through emails.

EFFECTIVE DATE: Fall 2015

## Geology

### Exploration and Environmental Geophysics Minor

FROM:

TO:

Program requirements	Program requirements
<ul style="list-style-type: none"> <li>• GEOL 100 – Earth in Action <b>Credits:</b> (3)</li> <li>• GEOL 103 – Geology Laboratory <b>Credits:</b> (1)</li> <li>• <del>GEOL 743</del> – Introduction to Geophysics <b>Credits:</b> (3)</li> <li>• GEOL 642 – Field Geophysics <b>Credits:</b> (3)</li> <li>• <del>GEOL 650 – Exploration Geophysics <b>Credits:</b> (3)</del></li> <li>• GEOL 520 – Geomorphology <b>Credits:</b> (3)</li> <li>or</li> <li>• GEOL 630 – Stratigraphy – Sedimentation <b>Credits:</b> (3)</li> </ul>	<ul style="list-style-type: none"> <li>• GEOL 100 – Earth in Action <b>Credits:</b> (3)</li> <li>• GEOL 103 – Geology Laboratory <b>Credits:</b> (1)</li> <li>• <b>GEOL 640</b> – Introduction to Geophysics <b>Credits:</b> (3)</li> <li>• GEOL 642 – Field Geophysics <b>Credits:</b> (3)</li> <li>• <u>GEOL 834 – Seismic Interpretation <b>Credits:</b> (3)</u></li> <li>• GEOL 520 – Geomorphology <b>Credits:</b> (3)</li> <li>or</li> <li>• GEOL 630 – Stratigraphy – Sedimentation <b>Credits:</b> (3)</li> </ul>
<p><b>Total credit hours: (16)</b></p>	<p><b>Total credit hours: (16)</b></p>
<p><del>*Geology majors seeking the geophysics minor will be required to take an additional geology elective at the 500+ level.</del></p>	

**RATIONALE:** The Environmental Geophysics minor was “mothballed” for several years because the department didn’t have a resident geophysicist able to teach the courses. However, Dr. Abdelmonean Raef has now rejoined the department and interest in resurrecting this minor has grown. It is therefore timely to consider not only resurrecting it, but refreshing it so that it is relevant to the career aspirations of the majority of our students. A significant proportion of our undergraduate majors and graduate students are interested in jobs in the energy sector, and so our geophysics courses have been updated to reflect this demand. Exploration Geophysics (formerly a separate course GEOL 650) is now fully integrated into several of our other geophysics courses, including GEOL 640 (Introduction to Geophysics); GEOL 642 (Field Geophysics) and GEOL 834 Seismic Data Interpretation. Amending the title of this minor to include “Exploration” as well as “Environmental” geophysics would more accurately reflect current practice and better serve our students.

**IMPACT:** Proposed changes would enhance opportunities for collaboration with other departments and colleges across campus, particularly Physics and Engineering, making clear the enhanced focus on exploration geophysics as a complement to environmental geophysics.

**EFFECTIVE DATE:** Fall 2015

## Geology B.S./B.A.

**FROM:**

In addition to the general requirements for the BA or BS degree, the following must be completed:

- CHM 210 – Chemistry I **Credits:** (4)
- CHM 230 – Chemistry II **Credits:** (4)
- GEOL 100 – Earth in Action **Credits:** (3)
- GEOL 103 – Geology Laboratory **Credits:** (1)
- GEOL 502 – Mineralogy **Credits:** (3)
- GEOL 503 – Petrology **Credits:** (3)
- ~~GEOL 520 – Geomorphology **Credits:** (3)~~
- GEOL 530 – Structural Geology **Credits:** (3)
- GEOL 560 – Field Methods **Credits:** (3)
- ~~GEOL 581 – Invertebrate Fossils **Credits:** (3)~~

**TO:**

In addition to the general requirements for the BA or BS degree, the following must be completed:

- CHM 210 – Chemistry I **Credits:** (4)
- CHM 230 – Chemistry II **Credits:** (4)
- GEOL 100 – Earth in Action **Credits:** (3)
- GEOL 102 – Earth Through Time **Credits:** (3)
- GEOL 103 – Geology Laboratory **Credits:** (1)
- GEOL 502 – Mineralogy **Credits:** (3)
- GEOL 503 – Petrology **Credits:** (3)
- GEOL 530 – Structural Geology **Credits:** (3)
- GEOL 560 – Field Methods **Credits:** (3)

- GEOL 630 – Stratigraphy–Sedimentation **Credits: (3)**
- GEOL 680 – Field Geology **Credits: (3)**
- ~~GEOL 750 – Geologic Evolution of Planet Earth **Credits: (3)**~~
- MATH 220 – Analytic Geometry and Calculus I **Credits: (4)**
- PHYS 113 – General Physics I **Credits: (4)**
- PHYS 114 – General Physics II **Credits: (4)**

**Plus one of the following and two Geology electives**

- ~~GEOL 605 – Introduction to Geochemistry **Credits: (3)**~~
- ~~or~~
- ~~GEOL 743 – Introduction to Geophysics **Credits: (3)**~~
- ~~and~~
- ~~Two courses at the 600 or 700 level~~
- ~~or~~
- ~~One course at the 600 or 700 level~~
- ~~and~~
- ~~GEOL 499 – Senior Honors Thesis **Credits: (1-3)**~~
- ~~or~~
- ~~GEOL 599 – Senior Thesis **Credits: (1-3)**~~

**Transfer students**

In addition to the general instructions to transfer students, students planning to pursue a degree in geology should complete as many of the following courses or their equivalents as possible, then follow

- GEOL 630 – Stratigraphy–Sedimentation **Credits: (3)**
- GEOL 680 – Field Geology **Credits: (3)**
- MATH 220 – Analytic Geometry and Calculus I **Credits: (4)**
- MATH 221 – Analytic Geometry and Calculus II **Credits: (4)**
- PHYS 213 – Engineering Physics I **Credits: (4)** OR PHYS 113 – General Physics I **Credits: (4)**
- PHYS 214 – General Physics II **Credits: (4)** OR PHYS 114 – General Physics II **Credits: (4)**

Plus at least one each from Groups I, II and III below and one additional elective from Groups I, II, III or IV

**GROUP I**

- GEOL 605 – Introduction to Geochemistry **Credits: (3)**
- GEOL 743 – Introduction to Geophysics **Credits: (3)**

**GROUP II (ENERGY AND NATURAL RESOURCES)**

- GEOL 702 – Economic Geology **Credits: (3)**
- GEOL 730 – Petroleum Geology **Credits: (3)**
- GEOL 834 – Seismic Data Interpretation **Credits: (3)**

**GROUP III (SURFICIAL PROCESSES & THE ENVIRONMENT)**

- GEOL 520 – Geomorphology **Credits: (3)**
- GEOL 611 – Hydrogeology **Credits: (3)**
- GEOL 650 – Geomicrobiology **Credits: (3)**

**GROUP IV (OTHER ELECTIVES)**

- GEOL 540 – Geologic Record of Climate Change **Credits: (3)**

the course requirements for the geology option described above:

- CHM 210 – Chemistry I **Credits:** (4)
- CHM 230 – Chemistry II **Credits:** (4)
- COMM 105 – Public Speaking IA **Credits:** (2)
- ENGL 100 – Expository Writing I **Credits:** (3)
- ENGL 200 – Expository Writing II **Credits:** (3)
- GEOL 100 – Earth in Action **Credits:** (3)
- GEOL 103 – Geology Laboratory **Credits:** (1)
- MATH 100 – College Algebra **Credits:** (3)
- MATH 150 – Plane Trigonometry **Credits:** (3)
- MATH 220 – Analytic Geometry and Calculus I **Credits:** (4)
- MATH 221 – Analytic Geometry and Calculus II **Credits:** (4)
- PHYS 113 – General Physics I **Credits:** (4)
- PHYS 114 – General Physics II **Credits:** (4)

**Total credit hours required for graduation: (120)**

- GEOL 581 – Invertebrate Fossils§ **Credits:** (3)
- GEOL 599 – Senior Thesis **Credits:** (3)
- GEOL 642 – Introduction to Field Geophysics **Credits:** (3)
- GEOL 704 – Carbonate Paleoenvironments **Credits:** (3)
- GEOL 708 – Sedimentary Geochemistry **Credits:** (3)
- GEOL 711 – Water Resources Geochemistry **Credits:** (3)
- GEOL 740 – Regional Geology **Credits:** (3)
- GEOL 760 – Geochemical and Biogeochemical Modelling **Credits:** (3)
- GEOL 770 – Subsurface Methods **Credits:** (3)
- GEOL 790 – Problems in Geology – Fossil Fuel Sedimentology **Credits:** (3)
- GEOL 790 – Problems in Geology – Formation Evaluation **Credits:** (3)
- GEOL 790 – IBA **Credits:** (3)
- GEOL 806 – Sedimentary Petrology **Credits:** (3)
- GEOL 810 – Isotope Geology **Credits:** (3)
- GEOL 830 – Geotectonics **Credits:** (3)
- GEOL 832 – Seismic Data Processing **Credits:** (3)
- GEOL 880 – Clay Mineralogy **Credits:** (3)

§ Note – GEOL 581 Invertebrate Fossils and GEOL 650 Geomicrobiology simultaneously satisfy CAS Life Sciences requirement

**Total Geology credit hours = 37**

**Transfer students**



	<p>In addition to the general instructions to transfer students, students planning to pursue a degree in geology should complete as many of the following courses or their equivalents as possible, then follow the course requirements for the geology option described above:</p> <ul style="list-style-type: none"> <li>• CHM 210 – Chemistry I <b>Credits:</b> (4)</li> <li>• CHM 230 – Chemistry II <b>Credits:</b> (4)</li> <li>• COMM 105 – Public Speaking IA <b>Credits:</b> (2)</li> <li>• ENGL 100 – Expository Writing I <b>Credits:</b> (3)</li> <li>• ENGL 200 – Expository Writing II <b>Credits:</b> (3)</li> <li>• GEOL 100 – Earth in Action <b>Credits:</b> (3)</li> <li>• GEOL 103 – Geology Laboratory <b>Credits:</b> (1)</li> <li>• MATH 100 – College Algebra <b>Credits:</b> (3)</li> <li>• MATH 150 – Plane Trigonometry <b>Credits:</b> (3)</li> <li>• MATH 220 – Analytic Geometry and Calculus I <b>Credits:</b> (4)</li> <li>• MATH 221 – Analytic Geometry and Calculus II <b>Credits:</b> (4)</li> <li>• <u>PHYS 213 – Engineering Physics I <b>Credits:</b> (4)</u></li> <li>• <u>OR</u></li> <li>• PHYS 113 – General Physics I <b>Credits:</b> (4)</li> <li>• <u>PHYS 214 – Engineering Physics I <b>Credits:</b> (4)</u></li> <li>• <u>OR</u></li> <li>• PHYS 114 – General Physics II <b>Credits:</b> (4)</li> </ul> <p><b>Total credit hours required for graduation: (120)</b></p>
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**RATIONALE:** The proposed changes are being made in response to the recommendations of an external curriculum review. A copy of the review can be provided if needed.

**IMPACT:** Proposed changes will impact Math and Physics. These impacts were discussed with Head of Physics, Amit Chakrabarti, and Head of Math, Andy Bennett, on 07 August 2014. Their support for the proposed changes is indicated in the attached emails. The emails are dated October 31, 2014.

**EFFECTIVE DATE:** Fall 2015

## Geology Minor

FROM:

TO:

<p><b>Program requirements</b></p> <hr/> <ul style="list-style-type: none"> <li>• GEOL 100 – Earth in Action <b>Credits:</b> (3)</li> <li>• GEOL 103 – Geology Laboratory <b>Credits:</b> (1)</li> <li>• GEOL 502 – Mineralogy <b>Credits:</b> (3)</li> <li>• <del>GEOL 520 – Geomorphology <b>Credits:</b> (3)</del></li> </ul> <p><b>Geology electives</b></p> <hr/> <ul style="list-style-type: none"> <li>• <del>Three courses at the 500 level or above (excluding GEOL 512) <b>Credits:</b> (7-10)</del></li> </ul> <p><b>Total credit hours: (17-21)</b></p>	<p><b>Program requirements</b></p> <hr/> <ul style="list-style-type: none"> <li>• GEOL 100 – Earth in Action <b>Credits:</b> (3)</li> <li>• GEOL 103 – Geology Laboratory <b>Credits:</b> (1)</li> <li>• GEOL 502 – Mineralogy <b>Credits:</b> (3)</li> </ul> <p><b>Geology electives</b></p> <hr/> <ul style="list-style-type: none"> <li>• At least three additional courses at 500 level or above (excluding GEOL 512) <b>Credits:</b> (9)</li> </ul> <p><b>Total credit hours: (16)</b></p>
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**RATIONALE:** The proposed changes are being made in response to the recommendations of an external review. A copy of the review can be provided if needed.

**IMPACT:** Proposed changes have minimal if any impact on other departments within the university.

**EFFECTIVE DATE:** Fall 2015