Meeting of the College Academic Council  
College of Liberal Arts & Sciences  
210 Strong Hall  
April 10, 2007 – 4:00 p.m.

AGENDA

I. APPROVAL OF THE MARCH 13, 2007 CAC MINUTES

II. REPORT OF THE COMMITTEE ON GRADUATE STUDIES (CGS)  
   Presented by Danny Anderson, submitted by Lindsey McCombs

   A. Curricular Changes for Approval:
      
      BIOL 750, BIOL 752, BIOL 753, BIOL 776, BIOL 811, BIOL 812, BIOL 813, BIOL 814, BIOL 815, BIOL 902,  
      BIOL 918, BIOL 925, ENGL 779

   B. Degree Requirements/Policy Changes For Approval:
      
      - M.A. and Ph.D. in Molecular Biosciences

III. REPORT OF COMMITTEE ON UNDERGRADUATE STUDIES & ADVISING (CUSA)  
    Presented by Anthony Walton, CUSA Chair, submitted by Carol Miner

    A. Curricular Changes for Approval:
      
      AAAS 557, GEOG 557, HEBR 330, HEBR 340, MATH 221, MATH 243, MATH 291, PHIL 320, SLAV 564, SOC 161
I. APPROVAL OF THE MARCH 13, 2007 CAC MINUTES

College of Liberal Arts & Sciences
College Academic Council
March 13, 2007
Minutes

- The meeting was called to order by Dean Steinmetz.

- CAC voted and approved the February 13, 2007 minutes.

- CAC voted and approved the Proposed MPA Partnership between the Public Administration Department and Tsinghua University in China

- CAC voted and approved ABSC 425, AMS 260, AMS 520, ANTH 161, ANTH 361, ANTH 571, EALC 418, EALC 595, EALC 618, GEOG 560, HIST 501, HIST 503, HIST 504, HIST 505, HIST 511, HIST 512, HIST 514, HIST 517, HIST 518, HIST 534, HIST 535, HIST 540, HIST 542, HIST 549, HIST 554, HIST 595, HWC 470, PSYC 571, PSYC 598, SOC 151, SOC 260

- CAC voted and approved the Grade Replacement/Repeated Course Policy

- Dean Steinmetz charged Associate Deans Paul D’Anieri and Danny Anderson to discuss the possibility of a plus/minus grading system for the College with CUSA and CGS.

- The meeting was adjourned at 5:05 p.m.
II. REPORT OF THE COMMITTEE ON GRADUATE STUDIES (CGS)
Presented by Danny Anderson, submitted by Lindsey McCombs

A. Curricular Changes for Approval:

BIOL 750, BIOL 752, BIOL 753, BIOL 776, BIOL 811, BIOL 812, BIOL 813, BIOL 814, BIOL 815, BIOL 902, BIOL 918, BIOL 925, ENGL 779

**CHANGE: PREREQUISITE**

**BIOL 750**  ADVANCED BIOCHEMISTRY (3)
(OLD) The structures and dynamics of proteins and nucleic acids will be developed in terms of well-understood examples which will also be used to discuss the function of major classes of proteins. The application of structural and dynamical principles to biological membranes and their function will also be discussed. Prerequisite: A general biochemistry course. LEC

**BIOL 750**  ADVANCED BIOCHEMISTRY (3)
(NEW) The structures and dynamics of proteins and nucleic acids will be developed in terms of well-understood examples which will also be used to discuss the function of major classes of proteins. The application of structural and dynamical principles to biological membranes and their function will also be discussed. Prerequisite: BIOL 807 and BIOL 808, a general biochemistry course, or permission of instructor. LEC

**CHANGE: PREREQUISITE**

**BIOL 752**  CELL BIOLOGY (3)
(OLD) A lecture course emphasizing biochemical, developmental, and molecular aspects of cell structure and function. Prerequisite: Completion of a graduate level course in biochemistry or permission of instructor. LEC

**BIOL 752**  CELL BIOLOGY (3)
(NEW) A lecture course emphasizing biochemical, developmental, and molecular aspects of cell structure and function. Prerequisite: BIOL 807 and BIOL 808, or BIOL 416 or BIOL 536, or permission of instructor. LEC

**CHANGE: PREREQUISITE, COURSE DESCRIPTION**

**BIOL 753**  ADVANCED GENETICS (3)
(OLD) An advanced course in modern genetic analysis using mainly eukaryotic systems. Course material will consist mainly of primary literature in the field of Genetics. Topics covered include: genomic structure and genome projects; nature of mutations; mutant analysis; genetic recombination and mapping; analysis of gene function; genetic buffering; RNAi and epigenetics; and the genetics of model organisms. This course is meant for graduate students in the Molecular Biosciences and Genetics programs. Prerequisite: A course in Genetics and a course in Biochemistry, or permission of the instructor. LEC

**BIOL 753**  ADVANCED GENETICS (3)
(NEW) An advanced course in modern genetic analysis of eukaryotes. Course material will consist mainly of primary literature in the field of genetics. Topics covered include: genomic structure and genome projects; nature of mutations; mutant analysis; genetic recombination and mapping; analysis of gene function; genetic buffering; RNAi and epigenetics; and the genetics of model organisms. This course is meant for graduate students in the Molecular Biosciences and Genetics programs. Prerequisite: BIOL 807 and BIOL 808, or a course in genetics and a course in biochemistry, or permission of the instructor. LEC
DELETE

BIOL 776  MAMMALIAN NEUROANATOMY (3)
Lectures, video tape demonstrations, and laboratory dissection of mammalian nervous system with some attention to human material. For pre-health science majors with major emphasis on structure as it relates to function. Prerequisite or Corequisite: A course in neurobiology (BIOL 435, BIOL 777), or permission of the instructor. LAB

CHANGE: CREDIT, PREREQUISITE

BIOL 811  ADVANCED MOLECULAR AND CELLULAR IMMUNOLOGY (3)
(OLD) Covers recent advances in immunochemistry and immunobiology. Topics include structure and function of antibodies, hybridoma systems, idioypes, induction and regulation of the immune response through cell interactions and cytokine action, and the role of immune activity in disease states such as hypersensitivity, autoreactivity, and cancer. Prerequisite: An introductory course in immunology, or consent of instructor. LEC

BIOL 811  ADVANCED MOLECULAR AND CELLULAR IMMUNOLOGY (2)
(NEW) Covers recent advances in immunochemistry and immunobiology. Topics include structure and function of antibodies, hybridoma systems, idioypes, induction and regulation of the immune response through cell interactions and cytokine action, and the role of immune activity in disease states such as hypersensitivity, autoreactivity, and cancer. Prerequisite: BIOL 807 and BIOL 808, or an introductory course in immunology, or consent of instructor. LEC

CHANGE: CREDIT, PREREQUISITE, COURSE DESCRIPTION

BIOL 812  MECHANISMS OF HOST-PARASITE RELATIONSHIPS (3)
(OLD) Lectures. Emphasis is on virulence factors of microorganisms and the host response to infection. Topics will include pathogenesis of intracellular and extracellular parasites, bacterial adhesins, and toxins, and the role of innate and acquired immunity in host resistance and the response to infection. Prerequisite: A course in biochemistry, or consent of instructor. LEC

BIOL 812  MECHANISMS OF HOST-PARASITE RELATIONSHIPS (2)
(NEW) Emphasis is on virulence factors of microorganisms and the host response to infection. Topics will include pathogenesis of intracellular and extracellular parasites, bacterial adhesins, and toxins, and the role of innate and acquired immunity in host resistance and the response to infection. Prerequisite: BIOL 807 and BIOL 808, or a course in biochemistry, or consent of instructor. LEC

CHANGE: CREDIT, PREREQUISITE, COURSE DESCRIPTION

BIOL 813  ADVANCED BACTERIAL PHYSIOLOGY (3)
(OLD) Lectures. The intermediary reactions catalyzed by the bacterial cell during energy-requiring processes. Thermodynamic considerations of these processes are discussed. Knowledge of calculus is recommended. Prerequisite: Ten hours of microbiology and one year of organic chemistry. LEC

BIOL 813  ADVANCED BACTERIAL PHYSIOLOGY (2)
(NEW) The intermediary reactions catalyzed by the bacterial cell during energy-requiring processes. Thermodynamic considerations of these processes are discussed. Knowledge of calculus is recommended. Prerequisite: BIOL 807 and BIOL 808, or a course in microbiology and a course in biochemistry, or consent of instructor. LEC
BIOL 814  ADVANCED MOLECULAR VIROLOGY (3)
(OLD) The course concentrates on evaluation of current literature concerning all aspects of molecular biology, biochemical characterization, and pathogenic mechanisms involved in host-virus interactions. Students will be expected to present articles and participate in discussions. Prerequisite: A course in microbial genetics and a course in virology, or consent of instructor. LEC

BIOL 814  ADVANCED MOLECULAR VIROLOGY (2)
(NEW) The course concentrates on evaluation of current literature concerning all aspects of molecular biology, biochemical characterization, and pathogenic mechanisms involved in host-virus interactions. Students will be expected to present articles and participate in discussions. Prerequisite: BIOL 807 and BIOL 808, or a course in microbial genetics and a course in virology, or consent of instructor. LEC

BIOL 815  ADVANCED MOLECULAR GENETICS (3)
(OLD) A literature-based course that covers recent advances in microbial genetics and molecular biology. Topics include transcription, translation, mutagenesis and repair, genetic exchange mechanisms, regulation of gene expression, and recombinant DNA techniques. Prerequisite: A course in microbial genetics, usually taken concurrently. LEC

BIOL 815  ADVANCED MICROBIAL GENETICS (2)
(NEW) A literature-based course that covers recent advances in microbial molecular genetics. Topics include transcription, translation, mutagenesis and repair, genetic exchange mechanisms, and regulation of gene expression. Prerequisite: BIOL 807 and BIOL 808, or a course in microbial genetics, or consent of instructor. LEC

BIOL 902  GRADUATE SEMINAR IN MOLECULAR, CELLULAR, AND DEVELOPMENTAL BIOLOGY (1)
(OLD) Advanced course examining current research topics in molecular, cellular, and developmental biology. Extensive student/faculty interaction is emphasized utilizing lectures, class discussion of assigned readings of research reports, and oral presentations. Prerequisite: Enrollment in graduate school, and departmental permission. LEC

BIOL 902  GRADUATE SEMINAR IN MOLECULAR, CELLULAR, AND DEVELOPMENTAL BIOLOGY (1)
(NEW) Advanced course examining current research topics in molecular, cellular, and developmental biology. Extensive student/faculty interaction is emphasized utilizing lectures, class discussion of assigned readings of research reports, and oral presentations. Prerequisite: Enrollment in graduate school, and departmental permission. Prerequisite: Enrollment in graduate school, and departmental permission. SEM

BIOL 918  MODERN BIOCHEMICAL AND BIOPHYSICAL METHODS (4)
(OLD) This course emphasizes the use of techniques for solving problems of structure and function of biological macromolecules. Students will complete several modules that consist of lectures relating to theory and practical aspects of each methodological approach, and apply these techniques to solving a specific problem. Students will submit a paper describing the resulting data and conclusions. Prerequisite: Enrollment by permission of instructor only. LEC
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<th>Course</th>
<th>Title</th>
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<tr>
<td>BIOL 918</td>
<td>MODERN BIOCHEMICAL AND BIOPHYSICAL METHODS (4)</td>
<td>(NEW) This course emphasizes the use of techniques for solving problems of structure and function of biological macromolecules. Students will complete several modules that consist of lectures relating to theory and practical aspects of each methodological approach, and apply these techniques to solving a specific problem. Students will submit a paper describing the resulting data and conclusions. Prerequisite: BIOL 807, BIOL 808, and BIOL 818, or permission of instructor. LEC</td>
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<td>BIOL 925</td>
<td>RESEARCH GRANT PROPOSAL PREPARATION (3)</td>
<td>(OLD) Formats, strategies, and styles of research grant proposal writing. Prerequisite: Completion of three semesters of the biochemistry or genetics program curriculum, and/or consent of instructor. LEC</td>
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<tr>
<td>BIOL 925</td>
<td>RESEARCH GRANT PROPOSAL PREPARATION (3)</td>
<td>(NEW) Formats, strategies, and styles of research grant proposal writing. Prerequisite: Completion of three semesters of the molecular biosciences or genetics program graduate curriculum, or consent of instructor. LEC</td>
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<tr>
<td>ENGL 779</td>
<td>US POETRIES SINCE 1900 (3)</td>
<td>A colloquium for graduate students, sampling the range of poetries and poetics produced in the United States in the twentieth and twenty-first centuries.</td>
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B. Degree Requirements/Policy Changes For Approval:

- M.A. and Ph.D. in Molecular Biosciences

I. STATE PROPOSAL IN DETAIL. List all new requirements, changes or deletions. Include current requirements and specify what is being changed (if anything).

Current requirements:

M.A. Degree Requirements

General Requirements for all M.A. Students. Refer to each discipline for specific course requirements. General requirements include (1) a minimum of 30 hours of graduate credit; (2) a minimum of one laboratory rotation for each new graduate student; (3) attendance at the departmental seminar every semester, independent of discipline; (4) a graduate committee established by the beginning of the spring semester of the first year; (5) a minimum of one annual graduate committee meeting until completion of the degree. The following thesis options are available:

1. Write a thesis resulting from original research on a laboratory problem.
2. Publish a research paper in a national, refereed journal. Acceptance of the paper for publication constitutes publication for conferral of the degree.
3. Write a library thesis on a topic approved by the student’s graduate committee.

Specific M.A. Requirements: Biochemistry and Biophysics. One laboratory rotation during the first semester of graduate study and all of the following courses are required: BIOL 701 Topics in Seminar Procedures, BIOL 772 Gene Expression, BIOL 750 Advanced Biochemistry, BIOL 752 Cell Biology, BIOL 901 Graduate Seminar in Biochemistry and Biophysics (one required), plus electives to satisfy the 30-hour requirement. Electives are determined in consultation with the graduate adviser and graduate committee.

Specific M.A. Requirements: Microbiology. Candidates for the M.A. in microbiology must fulfill departmental major requirements for a B.A. or B.S. degree in microbiology, or the equivalent. These courses are required: One laboratory rotation during the first semester of graduate study; BIOL 701 Topics in Seminar Procedures; BIOL 904 Graduate Seminar in Microbiology (must attend and participate every semester); and at least three graduate courses selected from BIOL 811 Advanced Molecular and Cellular Immunology, BIOL 812 Mechanisms of Host-parasite Relationships, BIOL 813 Advanced Bacterial Physiology, BIOL 814 Advanced Molecular Virology, BIOL 815 Advanced Molecular Genetics; plus electives to satisfy the 30-hour course requirement. No more than 6 of these hours can be below the 700 level. At least two courses must be in chemistry, biochemistry, or areas outside the department approved by the major adviser and graduate committee.

Specific M.A. Requirements: Molecular, Cellular, and Developmental Biology. One laboratory rotation during the first semester and all of the following courses are required: BIOL 701 Topics in Seminar Procedures, BIOL 772 Gene Expression, BIOL 750 Advanced Biochemistry, BIOL 752 Cell Biology, BIOL 902 Graduate Seminar in Molecular, Cellular, and Developmental Biology (one required), plus electives to satisfy the 30-hour course requirement. Electives are determined in consultation with the graduate adviser and graduate committee.

Ph.D. Degree Requirements

General Requirements for all Students. All Graduate School requirements in this catalog must be fulfilled. Refer to each discipline for specific course requirements. General requirements include (1) at least three individual laboratory rotations during the first two semesters of graduate study, (2) attendance at the weekly departmental seminar every semester, independent of discipline, (3) a FLORS requirement (see discipline’s degree requirements), (4) a minimum of two semesters of graduate teaching, (5) a graduate committee established before the beginning of the fall semester of the second year; (6) a minimum of one annual graduate committee meeting; (7) a written preliminary examination in the form of a research proposal completed by the end of the spring semester of the second year of graduate study (BIOL 925), (8) a comprehensive oral examination held no later than October 1 of the fall semester of the third year of graduate study (successful completion of the comprehensive oral examination admits the student to candidacy for the Ph.D. degree), (9) a dissertation based on original research presented to the dissertation examination committee for evaluation and presented and defended in a formal public lecture, (10) seven-year time limit to complete the degree.

First-year curriculum for All Students. The minimum number and types of first-year courses include BIOL 701 Topics in Research (fall semester); laboratory rotation (fall and spring semester); plus one course from each of the following areas during the first academic year: (1) biochemistry (may be fulfilled by either BIOL 658 Biochemistry I or BIOL 750 Advanced Biochemistry), (2) cell/developmental biology/immunology (may be fulfilled by either BIOL 752 Cell Biology or BIOL 811 Advanced Molecular and Cellular Immunology), (3) Genetics (may be fulfilled by either BIOL 815 Advanced Molecular Genetics or BIOL 772 Gene Expression).
Specific Ph.D. Requirements: Biochemistry and Biophysics. Refer to the first-year curriculum above. Three laboratory rotations are required during the first two semesters. All of the following courses are required: BIOL 701 Topics in Seminar Procedures, BIOL 772 Gene Expression, BIOL 750 Advanced Biochemistry, BIOL 752 Cell Biology, BIOL 901-BIOL 904 Graduate Seminars, BIOL 918 Modern Biochemical and Biophysical Methods, and BIOL 952 introduction to Molecular Modeling. The graduate committee may recommend that additional courses be taken. The FLORS requirement must be met by demonstrating training in a specific research technique or completing one of the following courses: BIOL 925 Research Grant Proposal Preparation, BIOL 719 Light and Electron Microscopy, BIOL 841 Biometry I, or BIOL 703 Radioisotopes and Radiation Safety in Research.

Specific Ph.D. Requirements: Microbiology. Refer to the first-year curriculum above. Three laboratory rotations are required during the first two semesters. All of the following courses are required: BIOL 701 Topics in Seminar Procedures, BIOL 811 Advanced Molecular and Cellular Immunology, BIOL 812 Mechanisms of Host-parasite Relationships, BIOL 813 Advanced Bacterial Physiology, BIOL 814 Advanced Molecular Virology, BIOL 815 Advanced Molecular Genetics, and BIOL 904 Graduate Seminar in Microbiology (must attend and participate every semester). The graduate committee may recommend that additional courses be taken. The FLORS requirement must be met by one of the following courses: BIOL 750 Advanced Biochemistry, CHEM 627 or higher, a course in computer science listed in this catalog under Research Skills, a course in electron microscopic methods, a course in radioisotope techniques (e.g., BIOL 702, BIOL 703), a course in tissue culture techniques (BIOL 756). NOTE: Ph.D. students in microbiology must take a 2-hour written examination at the end of the first year of graduate study, usually in May. The content of the examination is general microbiology as covered in BIOL 400. A committee whose membership rotates among the microbiology section’s graduate faculty prepares the examination. The examination must be passed with an overall score of at least 65 percent before the student can progress to the doctoral qualifying (comprehensive) examination. A student who fails in a second attempt to pass the examination at the beginning of the succeeding fall semester may not continue as a Ph.D. candidate and is not eligible for a teaching assistantship after that semester.

Specific Ph.D. Requirements: Molecular, Cellular, and Developmental Biology. Refer to the first-year curriculum above. Three laboratory rotations are required during the first two semesters. All of the following courses are required: BIOL 701 Topics in Seminar Procedures, BIOL 772 Gene Expression, BIOL 690 Control Mechanisms in Development, BIOL 750 Advanced Biochemistry, BIOL 752 Cell Biology, and BIOL 901-BIOL 904 Graduate Seminars. The graduate committee may recommend that additional courses be taken. The FLORS requirement must be met by demonstrating training in a specific research technique or completing one of the following courses: BIOL 925 Research Grant Proposal Preparation, BIOL 719 Light and Electron Microscopy, BIOL 841 Biometry I, or BIOL 703 Radioisotopes and Radiation Safety in Research.

Current requirements with proposed changes shown in red:

M.A. Degree Requirements

General Requirements for all M.A. Students. Refer to each discipline for specific course requirements. General requirements include (1) a minimum of 30 hours of graduate credit; (2) a minimum of one laboratory rotation for each new graduate student during the first semester of graduate study; (3) enrollment each semester in BIOL 701 Molecular Biosciences Seminar attendance at the departmental seminar every semester, independent of discipline; (4) completion of the following courses: BIOL 807 Molecular Biosciences I, BIOL 808 Molecular Biosciences II, and BIOL 818 Techniques in Molecular Biosciences, (45) a graduate committee established by the beginning of the spring semester of the first year; (5) a minimum of one annual graduate committee meeting until completion of the degree. The following thesis options are available:

1. Write a thesis resulting from original research on a laboratory problem.
2. Publish a research paper in a national, refereed journal. Acceptance of the paper for publication constitutes publication for conferral of the degree.
3. Write a library thesis on a topic approved by the student’s graduate committee.

Specific M.A. Requirements: Biochemistry and Biophysics. Refer to the first-year curriculum above. One laboratory rotation during the first semester of graduate study, and all. All of the following courses are required: BIOL 701 Topics in Seminar Procedures, BIOL 772 Gene Expression, BIOL 750 Advanced Biochemistry, BIOL 752 Cell Biology, BIOL 901 Graduate Seminar in Biochemistry and Biophysics (one required), plus electives to satisfy the 30-hour requirement. Electives are determined in consultation with the graduate adviser and graduate committee.

Specific M.A. Requirements: Microbiology. Candidates for the M.A. in microbiology must fulfill departmental major requirements for a B.A. or B.S. degree in microbiology, or the equivalent. These courses are required: One laboratory rotation during the first semester of graduate study; BIOL 701 Topics in Seminar Procedures; BIOL 901 Graduate
Seminar in Microbiology (must attend and participate every semester); and at least three graduate courses are required, selected from: BIOL 811 Advanced Molecular and Cellular Immunology, BIOL 812 Mechanisms of Host-parasite Relationships, BIOL 813 Advanced Bacterial Physiology, BIOL 814 Advanced Molecular Virology, BIOL 815 Advanced Molecular Genetics; plus electives to satisfy the 30-hour course requirement. No more than 6 of these hours can be below the 700 level. At least two courses must be in chemistry, biochemistry, or areas outside the department approved by the major adviser and graduate committee. Electives are determined in consultation with the graduate adviser and graduate committee.

Specific M.A. Requirements: Molecular, Cellular, and Developmental Biology. One laboratory rotation during the first semester and all of the following courses are required: BIOL 701 Topics in Seminar Procedures, BIOL 690 Control Mechanisms in Development, BIOL 752 Cell Biology, and either BIOL753 Advanced Genetics or BIOL 772 Gene Expression, BIOL 750 Advanced Biochemistry, BIOL 902 Graduate Seminar in Molecular, Cellular, and Developmental Biology (one required), plus electives to satisfy the 30-hour course requirement. Electives are determined in consultation with the graduate adviser and graduate committee.

Ph.D. Degree Requirements

General Requirements for all Students. All Graduate School requirements in this catalog must be fulfilled. Refer to each discipline for specific course requirements. General requirements include (1) at least three individual laboratory rotations during the first two semesters of graduate study, (2) enrollment each semester in BIOL 701 Molecular Biosciences Seminar attendance at the departmental seminar every semester, independent of discipline, (3) completion of the following courses: BIOL 807 Molecular Biosciences I, BIOL 808 Molecular Biosciences II, and BIOL 818 Techniques in Molecular Biosciences, (4) a FLORS requirement (see discipline’s degree requirements) (satisfied by completion of BIOL 818), (5) a minimum of two semesters of graduate teaching, (6) a graduate committee established before the beginning of the fall semester of the second year; (67) a minimum of one annual graduate committee meeting, (7) a written preliminary examination in the form of a research proposal completed by the end of the spring semester of the second year of graduate study (BIOL 925), (8) a comprehensive oral examination held no later than October 1 of the fall semester of the third year of graduate study (successful completion of the comprehensive oral examination admits the student to candidacy for the Ph.D. degree), (9) a dissertation based on original research presented to the dissertation examination committee for evaluation and presented and defended in a formal public lecture, (10) seven-year time limit to complete the degree.

First-year curriculum for All Students. The minimum number and types of first-year courses include BIOL 701 Molecular Biosciences Seminar (enrollment required each semester) Topics in Research (fall semester); laboratory rotation (fall and spring semester); BIOL 807 Molecular Biosciences I, BIOL 808 Molecular Biosciences II, and BIOL 818 Techniques in Molecular Biosciences, plus one course from each of the following areas during the first academic year: (1) biochemistry (may be fulfilled by either BIOL 658 Biochemistry I or BIOL 750 Advanced Biochemistry), (2) cell/developmental biology/immunology (may be fulfilled by either BIOL 752 Cell Biology or BIOL 811 Advanced Molecular and Cellular Immunology), (3) Genetics (may be fulfilled by either BIOL 815 Advanced Molecular Genetics or BIOL 772 Gene Expression).

Specific Ph.D. Requirements: Biochemistry and Biophysics. Refer to the first-year curriculum above. Three laboratory rotations are required during the first two semesters. All of the following courses are required: BIOL 701 Topics in Seminar Procedures, BIOL 772 Gene Expression, BIOL 750 Advanced Biochemistry, BIOL 752 Cell Biology, BIOL 901 Graduate Seminar in Biochemistry (1 semester) BIOL 901 Graduate Seminar, BIOL 918 Modern Biochemical and Biophysical Methods, and BIOL 952 Introduction to Molecular Modeling. The graduate committee may recommend that additional courses be taken. The FLORS requirement must be met by demonstrating training in a specific research technique or completing one of the following courses: BIOL 925 Research Grant Proposal Preparation, BIOL 719 Light and Electron Microscopy, BIOL 841 Biometry I, or BIOL 703 Radioisotopes and Radiation Safety in Research.

Specific Ph.D. Requirements: Microbiology. Refer to the first-year curriculum above. Three laboratory rotations are required during the first two semesters. All of the following courses are required: BIOL 701 Topics in Seminar Procedures. At least four of the following five graduate courses are required: BIOL 811 Advanced Molecular and Cellular Immunology, BIOL 812 Mechanisms of Host-parasite Relationships, BIOL 813 Advanced Bacterial Physiology, BIOL 814 Advanced Molecular Virology, BIOL 815 Advanced Molecular Genetics, and BIOL 904 Graduate Seminar in Microbiology (must attend and participate every semester). The graduate committee may recommend that additional courses be taken. The FLORS requirement must be met by one of the following courses: BIOL 750 Advanced Biochemistry, CHEM 627 or higher, a course in computer science listed in this catalog under Research Skills, a course in electron microscopic methods, a course in radioisotope techniques (e.g., BIOL 702, BIOL 703), a course in tissue culture techniques (BIOL 756).
NOTE: Ph.D. students in microbiology must take a 2-hour written examination at the end of the first year of graduate study, usually in May. The content of the examination is general microbiology as covered in BIOL 400. A committee whose membership rotates among the microbiology section’s graduate faculty prepares the examination. The examination must be passed with an overall score of at least 65 percent before the student can progress to the doctoral qualifying (comprehensive) examination. A student who fails in a second attempt to pass the examination at the beginning of the succeeding fall semester may not continue as a Ph.D. candidate and is not eligible for a teaching assistantship after that semester.

Specific Ph.D. Requirements: Molecular, Cellular, and Developmental Biology. Refer to the first-year curriculum above. Three laboratory rotations are required during the first two semesters. The following courses are required: BIOL 701 Topics in Seminar Procedures, BIOL 690 Control Mechanisms in Development, BIOL 750 Advanced Biochemistry, BIOL 752 Cell Biology, and either BIOL 753 Advanced Genetics or BIOL 772 Gene Expression. BIOL 901-904 Graduate Seminars. The graduate committee may recommend that additional courses be taken. The FLORS requirement must be met by demonstrating training in a specific research technique or completing one of the following courses: BIOL 925 Research Grant Proposal Preparation, BIOL 719 Light and Electron Microscopy, BIOL 841 Biometry I, or BIOL 703 Radioisotopes and Radiation Safety in Research.

Final Proposed Requirements:

M.A. Degree Requirements

General Requirements for all M.A. Students. Refer to each discipline for specific course requirements. General requirements include (1) a minimum of 30 hours of graduate credit; (2) a minimum of one laboratory rotation during the first semester of graduate study; (3) enrollment each semester in BIOL 701 Molecular Biosciences Seminar; (4) completion of the following courses: BIOL 807 Molecular Biosciences I, BIOL 808 Molecular Biosciences II, and BIOL 818 Techniques in Molecular Biosciences, (5) a graduate committee established by the beginning of the spring semester of the first year; (6) a minimum of one annual graduate committee meeting until completion of the degree. The following thesis options are available:

1. Write a thesis resulting from original research on a laboratory problem.
2. Publish a research paper in a national, refereed journal. Acceptance of the paper for publication constitutes publication for conferral of the degree.
3. Write a library thesis on a topic approved by the student’s graduate committee.

Specific M.A. Requirements: Biochemistry and Biophysics. All of the following courses are required: BIOL 772 Gene Expression, BIOL 750 Advanced Biochemistry, plus electives to satisfy the 30-hour requirement. Electives are determined in consultation with the graduate adviser and graduate committee.

Specific M.A. Requirements: Microbiology. Candidates for the M.A. in microbiology must fulfill departmental major requirements for a B.A. or B.S. degree in microbiology, or the equivalent. At least three graduate courses are required, selected from: BIOL 811 Advanced Molecular and Cellular Immunology, BIOL 812 Mechanisms of Host-parasite Relationships, BIOL 813 Advanced Bacterial Physiology, BIOL 814 Advanced Molecular Virology, BIOL 815 Advanced Molecular Genetics; plus electives to satisfy the 30-hour course requirement. No more than 6 of these hours can be below the 700 level. Electives are determined in consultation with the graduate adviser and graduate committee.

Specific M.A. Requirements: Molecular, Cellular, and Developmental Biology. All of the following courses are required: BIOL 690 Control Mechanisms in Development, BIOL 752 Cell Biology, and either BIOL 753 Advanced Genetics or BIOL 772 Gene Expression, plus electives to satisfy the 30-hour course requirement. Electives are determined in consultation with the graduate adviser and graduate committee.

Ph.D. Degree Requirements

General Requirements for all Students. All Graduate School requirements in this catalog must be fulfilled. Refer to each discipline for specific course requirements. General requirements include (1) at least three individual laboratory rotations during the first two semesters of graduate study, (2) enrollment each semester in BIOL 701 Molecular Biosciences Seminar; (3) completion of the following courses: BIOL 807 Molecular Biosciences I, BIOL 808 Molecular Biosciences II, and BIOL 818 Techniques in Molecular Biosciences, (4) a FLORS requirement (satisfied by completion of BIOL 818), (5) a minimum of two semesters of graduate teaching, (6) a graduate committee established before the beginning of the fall semester of the second year; (7) a minimum of one annual graduate committee meeting, (8) a written preliminary examination in the form of a research proposal completed by the end of the spring semester of the second year of graduate study (BIOL 925), (9) a comprehensive oral examination held no later than October 1 of the fall semester of the third year of graduate study (successful completion of the comprehensive oral examination admits the student to candidacy for the Ph.D. degree), (10) a dissertation based on original research presented to the dissertation examination
committee for evaluation and presented and defended in a formal public lecture, (11) seven-year time limit to complete the degree.

**First-year Curriculum for All Students.** The minimum number and types of first-year courses include BIOL 701 Molecular Biosciences Seminar (enrollment required each semester); laboratory rotations (fall and spring semester); BIOL 807 Molecular Biosciences I, BIOL 808 Molecular Biosciences II, and BIOL 818 Techniques in Molecular Biosciences.

**Specific Ph.D. Requirements: Biochemistry and Biophysics.** Refer to the first-year curriculum above. All of the following courses are required: BIOL 750 Advanced Biochemistry, BIOL 901 Graduate Seminar in Biochemistry (1 semester), BIOL 918 Modern Biochemical and Biophysical Methods, and BIOL 952 Introduction to Molecular Modeling. The graduate committee may recommend that additional courses be taken.

**Specific Ph.D. Requirements: Microbiology.** Refer to the first-year curriculum above. At least four of the following five graduate courses are required: BIOL 811 Advanced Molecular and Cellular Immunology, BIOL 812 Mechanisms of Host-parasite Relationships, BIOL 813 Advanced Bacterial Physiology, BIOL 814 Advanced Molecular Virology, BIOL 815 Advanced Molecular Genetics. The graduate committee may recommend that additional courses be taken.

**Specific Ph.D. Requirements: Molecular, Cellular, and Developmental Biology.** Refer to the first-year curriculum above. The following courses are required: BIOL 690 Control Mechanisms in Development, BIOL 752 Cell Biology, and either BIOL 753 Advanced Genetics or BIOL 772 Gene Expression. The graduate committee may recommend that additional courses be taken.

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**II. STATE JUSTIFICATION FOR MAKING CHANGES.** Give a brief, but complete, explanation of the reasons for making the proposal.

The Dept. of Molecular Biosciences was formed through the merging of three departments (Biochemistry, Microbiology, Physiology & Cell Biology), as a reflection of the increasing unification of core knowledge in these areas. Until now, Molecular Biosciences graduate students have declared which of these areas they wanted to concentrate in, and took largely separate courses that reflected the previous departments’ requirements. The graduate school has now approved 3 courses that will form the core of a common first-semester curriculum for all Molecular Biosciences students: BIOL 807 Molecular Biosciences I, BIOL 808 Molecular Biosciences II, and BIOL 818 Techniques in Molecular Biosciences. The current proposal alters the formal curriculum to incorporate these three courses into each Molecular Biosciences graduate student’s first semester, followed by advanced courses in subsequent semesters to allow students to specialize in a particular field of Molecular Biosciences. By providing a common first semester for all of our graduate students, we anticipate greater class cohesion and a stronger knowledge of a core of information which should allow better performance on graduate qualifying examinations. In addition, students will be exposed to a wider range of material before making a better informed decision on which area of research to specialize in.

**III. EFFECTIVE DATE.** Unless otherwise requested by the department and approved by CGS and College Assembly, the new requirements will apply to students whose KU initial term is the one immediately following final approval of the requirements.

August 1, 2007 (for students entering fall term 2007)
B. Curricular Changes for Approval:

AAAS 557, GEOG 557, HEBR 330, HEBR 340, MATH 221, MATH 243, MATH 291, PHIL 320, SLAV 564, SOC 161

CHANGE: NEW CROSS-LISTED COURSE

AAAS 557 CITIES AND DEVELOPMENT 3 (S)
An intermediate level course in urban geography, with an emphasis on cities in the developing world. Example cities in Latin America and the Caribbean, Sub-Saharan Africa, the Middle East, South Asia, and/or Southeast Asia may be examined. The main focus is on the intersection between urbanization and economic development, but social, political, and cultural aspects of development in cities are considered. Other topics include the geographic impacts of European colonialism, urbanization and industrialization, rural-to-urban migration, urban structure and spatial dynamics, urban planning, and environmental sustainability. (Same as GEOG 557)

NEW COURSE

HEBR 330 THIRD LEVEL MODERN HEBREW 3 (H)
A course designed to improve oral, audio and writing proficiencies in Modern Hebrew through reading and discussion of poems, Israeli newspaper articles and other selected materials. Not open to native speakers of Hebrew. Pre-requisite: HEBR 220, with a grade of "B" or better recommended, or permission of the instructor.

NEW COURSE

HEBR 340 ASPECTS OF MODERN HEBREW 3 (H)
Continued study in Modern Hebrew via poems, short stories, Israeli newspaper articles and electronic media. The course is designed to strengthen linguistic skills, enrich vocabulary and further the study of grammar and syntax. Not open to native speakers of Hebrew. Prerequisite: HEBR 330, with a grade of "B" or better recommended or permission of the instructor.

NEW COURSE

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

MATH 243  VECTOR CALCULUS (HONORS)  3 (N)
Multivariable Calculus, Multiple Integration, Vector Calculus, Enrichment Applications. Prerequisites:
Math 122 or Math 142 or equivalent, and invitation from the Department of Mathematics.

NEW COURSE

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

NEW COURSE

PHIL 320  PHILOSOPHICAL ISSUES IN THE LIFE SCIENCES  3 (H)
A philosophical analysis of theoretical and ethical issues that arise in the practice of the life sciences.
Discusses the conceptual foundation of the life sciences--evolutionary theory and genetics. Critically
explores the use of statistical and non-human-animal models. Examines ethical issues including
problems that arise in human and other animal experimentation, obligations to the environment, proper
use of patents, and conflicts in professional duties.

NEW COURSE

SLAV 564  THE "WOMAN QUESTION" IN NINETEENTH-CENTURY RUSSIAN LITERATURE  3 (H)
An exploration of the "woman question" in nineteenth-century Russia as treated in literary texts.
Authors to be included are: Tolstoy, Turgenev, Dostoevsky, Chekhov, as well as women writers such
as Karolina Pavlova and Evgeniia Tur, and prominent literary and social critics. Readings in English.

CHANGE: COURSE DESCRIPTION

SOC 161  SOCIAL PROBLEMS AND AMERICAN VALUES, HONORS  3
(OLD) This is a course designed to explore competing explanations for the causes of, and cures for, the
enduring problems of American society. The course critically analyzes dominant definitions of social
problems, the political and economic roots of these problems, and the public policies aimed at
reducing them. Open only to students on dean's honor roll or enrolled in Honors Program, or consent
of instructor. May not be taken by those who also have credit for SOC 304.

SOC 161  SOCIAL PROBLEMS AND AMERICAN VALUES, HONORS  3
(NEW) Explores competing explanations for the causes of, and cures for, the enduring problems of American
society. Critically analyzes dominant definitions of social problems, the political and economic roots
of these problems, and the public policies aimed at reducing them. This course may not be taken for
credit by those who have taken SOC 160 or SOC 306. Open only to students admitted to the
University Honors Program or by consent of instructor.