Present:   Dave Ballantine (Chair), Sherine Elsawa (BIOS), Steve Estes (Ex-Officio), Angela Grippo (PSYC), Melissa Lenczewski (ENVS), Doris Macdonald (ENGL), Andrea Radasanu (POLS)

Suzanne Hogan (CLAS)

Absent:   Kate Cady (COMS)

A.  **Action on Minutes**

Minutes from the #1 meeting on September 9, 2015, are in the process of being approved by the committee.

B.  **Miscellaneous**

We welcomed Sherine Elsawa (BIOS) who will be serving the remainder of Joel Stafstrom’s term and Angela Grippo (PSYC) who is filling in for Giovanni Bennardo this fall.

C.  **Curriculum – Old Business**

None

D.  **Curriculum – New Business**

**College of Liberal Arts and Sciences**

The committee approved revisions to the Concentration in Medieval Studies.

**Department of Anthropology**

A course revision for ANTH 548/554 was approved.

**Department of Chemistry and Biochemistry**

Course revisions were approved for CHEM 332, CHEM 333, CHEM 339, CHEM 445, CHEM 446, and CHEM 450. Revisions to the major requirements in Emphasis 3 and Emphasis 4 were also approved.

**Department of Economics**

A new course proposal for ECON 649 was approved as well as course revisions to ECON 370, ECON 791, ECON 793, and ECON 795. Revisions to the B.S. requirements were approved. A proposal for the Certificate of Graduate Study in Financial Engineering was also approved. Revisions to ECON 494 were TABLED until the repeat factor can be clarified with the department.
Department of Geology and Environmental Geosciences

A new course proposal for GEOL 200 was approved.

Tabled:

ECON – Course Revision: ECON 494
College of Liberal Arts and Sciences

Other Catalog Change Page 203, 2015-16 Undergraduate Catalog

Interdisciplinary Concentration

Concentration in Medieval Studies

Requirements (21)

Five of the following from at least three departments (15)

- ARTH 310 – Studies in Ancient and Middle Eastern Art (3) H. Islamic Art
  - PHIL 321 – Ancient Philosophy (3)
  - PHIL 390 – Topics in Philosophy (3), for relevant topics only by permission of Medieval Studies Coordinator
  - PHIL 421 – Major Philosophers (3), for relevant topics only by permission of Medieval Studies Coordinator
  - PHIL 423 – Medieval Philosophy (3)

Rationale: We wish to update the course list to reflect changes in the offerings of the Department of Philosophy. The two courses we wish to add vary in content from semester to semester, but we plan to award elective credit toward the Medieval Studies Concentration for both courses whenever their topics are relevant to Medieval Studies.

Impact Statement: The Department of Philosophy supports the addition of PHIL 390 and PHIL 421 to the list of outside requirements for the Concentration in Medieval Studies. Neither department has identified any negative impact on course availability or enrollment with this change.

Department of Anthropology

Course Revision Page 201, 2015-16 Graduate Catalog

548.554 USES AND ABUSES OF EVOLUTIONARY THEORY (3). Review of … ….

Rationale: This course number has been changed to reflect its appropriate position as a theoretical course comparable to other theoretical anthropology courses in the 550s.

Department of Chemistry and Biochemistry

Course Revisions Page 228, 2015-16 Undergraduate Catalog
332. GENERAL ORGANIC LABORATORY I (1). Basic laboratory … …. CRQ: CHEM 330 or CHEM 336 consent of department.

333. GENERAL ORGANIC LABORATORY II (1). Continuation of … …. PRQ: CHEM 332. CRQ: CHEM 331 or CHEM 337 consent of department.

339. ORGANIC CHEMISTRY LABORATORY II (1). Continuation of … …. PRQ: CHEM 338. CRQ: CHEM 330 or CHEM 336 337 or consent of department.

Rationale: PRQ changes – Both for safety and for pedagogical reasons, the second-semester organic chemistry laboratory should only be taken after the first-semester organic chemistry laboratory is completed. This is implied by the “continuation” descriptions, but it should be made explicit. This applies to both CHEM 333 and CHEM 339. CRQ changes – There are two two-semester organic chemistry lecture tracks: “general organic chemistry” (CHEM 330 and 331) and “organic chemistry” (CHEM 336 and 337). The two laboratory sequences are aligned with the two lecture sequences, and the revision in CRQ options directs students to the most appropriate laboratory class for each lecture. This was already done for CHEM 338. Adding “consent of department” to the CRQ lists will allow for unusual cases where taking the most appropriate laboratory is not feasible (typically because a laboratory class is full). In addition, there was an oversight when the original CHEM 338 (a two-hour laboratory) was split into CHEM 338 and CHEM 339 (both one hour laboratories) in the 2013-2014 UG Catalog. The old CRQ was left in place for CHEM 339, but it should be changed to the second semester lecture class (CHEM 337).

Course Revisions Page 229, 2015-16 Undergraduate Catalog

445. KINETICS (3). Theories and applications … …. PRQ: CHEM 441 or consent of department.

446. THEORETICAL CHEMISTRY (3). Continuation of … …. PRQ: CHEM 441 or consent of department.

450. NANOCHEMISTRY (3). Fundamental theory … …. PRQ: CHEM 441, or consent of department.

Rationale: These advanced physical chemistry classes build on knowledge of the material in CHEM 440 and CHEM 441 (Physical Chemistry I and II). They should all have CHEM 441 as a prerequisite, except for unusual cases allowed for by “consent of department.” For consistency a comma is removed from the description of CHEM 450.

Other Catalog Change Page 226, 2015-16 Undergraduate Catalog

Chemistry (B.S.)
Emphasis 3. Secondary Teaching

Requirements in Department (52-58)

CHEM 336 – Organic Chemistry I (3)
AND CHEM 332, 338 – General Organic Chemistry Laboratory I (1)
CHEM 337 – Organic Chemistry II (3)
AND CHEM 333, 339 – General Organic Chemistry Laboratory II (1)

Emphasis 4. Chemistry for Pre-Professional Students

Requirements in Department (32-33)

CHEM 336 – Organic Chemistry I (3)
AND CHEM 337 – Organic Chemistry II (3)
AND CHEM 338 – Organic Chemistry Laboratory I (1)
AND CHEM 339 – Organic Chemistry Laboratory II (1)
OR CHEM 330 – General Organic Chemistry I (3)
AND CHEM 331 – General Organic Chemistry II (3)
AND CHEM 332 – General Organic Laboratory I (1)
AND CHEM 333 – General Organic Laboratory II (1)
CHEM 338 – Organic Chemistry Laboratory I (1)
AND CHEM 339 – Organic Chemistry Laboratory II (1)
OR CHEM 332 – General Organic Laboratory I (1)
AND CHEM 333 – General Organic Laboratory II (1)

CHEM 470 – General Biological Chemistry (3)
AND two electives chosen from 400-level courses excluding courses numbered 490 to 497 (6-7)
OR CHEM 472 – Biological Chemistry I (3)
AND CHEM 473 – Biological Chemistry II (3)
AND one elective chosen from 400-level courses excluding courses numbered 490 to 497 (3-4)

Rationale: There are two two-semester organic chemistry lecture tracks: “general organic chemistry” (CHEM 330 and 331) and “organic chemistry” (CHEM 336 and 337). The two laboratory sequences are aligned with the two lecture sequences, and these revisions direct students to the most appropriate laboratory class for each lecture. This is already true for Emphasis 1 and Emphasis 2. The elective list for Emphasis 3 is changed to match the proposed requirements list. The relevant criteria is to take a particular number of credit hours of electives. The specific number of classes taken depends on the number of credit hours assigned to the class. The new text is more consistent with that used for the other three CHEM emphases.
Department of Economics

New Course

Page 221, 2015-16 Graduate Catalog

CIP: 45.0601

649. ALGORITHMIC TRADING (3). High-performance computational methods for high frequency and algorithmic trading. Topics include a review of available high-performance optimization hardware and software, machine learning, high-frequency market microstructure and models of financial markets, real time dynamic optimization, robotic trading algorithms, agent-based models, arbitrage strategies, and automated textual analysis. PRQ: ECON 647 and CSCI 689; or consent of department.

Rationale: The course is designed for the new Masters of Science in Financial Risk Management (MS in FRM) program but will be open to all students who meet the prerequisites. Our discussion with individuals working in the Chicago financial sector (including the Chicago Mercantile Exchange) indicate that there is significant demand in industry for individuals who can formulate and implement real-time trading algorithms. This course is designed to provide MS in FRM students (and others) with preparation for jobs involving real-time trading algorithms.

Non-Duplication: The Department of Finance, Computer Science, and the Division of Statistics were notified with regard to this course and have indicated there is no significant duplication with any of their current course offerings. These units are part of the group (Finance, Economics, Computer Science, and Statistics) that has jointly developed the expanded curriculum for the MS in FRM program.

Course Revision

Page 245, 2015-16 Undergraduate Catalog

370. CURRENT ECONOMIC ISSUES (3).
   A. Health Economics
   B. Income Distribution and Poverty
   C. Economics and Equity
   D. Economic Analysis of Recent Legislation
   E. Game Theory
   F. Industrial Organization
   G. Topics in Modern Economics

Topics of current importance to consumers, resource owners, business, and government. May be repeated up to 6 hours once as topics change and can be taken concurrently. PRQ: ECON 260 and ECON 261.

Rationale: This course was initially used for several topics that were taught infrequently. As our faculty has changed these topics have come to be taught more regularly, so last year the Department created separate courses for the more commonly offered topics:
ECON 371 – Health Economics,  
ECON 372 – Income Distribution and Poverty  
ECON 373 – Economics and Equity  
ECON 374 – Game Theory  
ECON 375 – Industrial Organization

We did not request that the description of ECON 370 be changed last year and are now requesting that the description of the course be reduced to a flexible topics course in current economic issues. This will allow us to use it as a vehicle for an occasional course focusing on a specific topic not usually offered. For example, in Fall 2015 a section of ECON 370 taught by a visiting faculty member focuses on financial economics issues in the global economy.

Course Revision Page 222, 2015-16 Graduate Catalog

791. COMPUTATIONAL ECONOMICS (2-3). Covers environments ……. PRQ: Consent of department.

Rationale: After teaching this new course, it was decided that the workload and material warranted a 3 credit hour course rather than the two credits originally thought to be appropriate. This will only impact the total credits for the MA in Economics with a Concentration in Financial Economics.

Course Revision Page 222, 2015-16 Graduate Catalog

793. SEMINAR IN QUANTITATIVE ECONOMICS FINANCIAL AND TIME-SERIES ECONOMETRICS (3). Application of mathematical and statistical techniques to the analysis of economic and financial problems. May be repeated …....

Rationale: This course is currently taught in this way, however, we felt that we should change the title to more accurately reflect that materials covered in the course and for its proposed inclusion in the proposed M.S. in Financial Risk Management in conjunction with the Department of Finance in the College of Business.

Course Revision Page 222, 2015-16 Graduate Catalog

795. INTERNSHIP IN ECONOMICS (2-15 1-6). May be repeated to a maximum of 15 6 semester hours. PRQ: Written consent of department Graduate Committee.

Rationale: Lowering the possible hours to be more in line with PhD hour expectations and caps and caps on hours for Master’s level work.

Other Catalog Change Page 244, 2015-16 Undergraduate Catalog
Major in Economics (B.A. or B.S.)

↓

Requirements outside Department (B.A., 3-16; B.S., 11-14)

↓

For the B.S. degree

One of the following groups (11-14)

   Either

   CSCI 210 – Elementary Programming (4)
   OR CSCI 230 240 – Computer Programming in FORTRAN C++ (4)
   MATH 210 – Finite Mathematics (3)
   MATH 211 – Calculus for Business and Social Science (3)
   STAT 301 – Elementary Statistic (4)

↓

Rationale: The current catalog requirement for the BS in Economics includes taking either CSCI 210 or CSCI 230. (Please see above.) The Chair of the Computer Science Department has informed the Department of Economics that CSCI will not be offering CSCI 230 in the future because there is currently little demand for FORTRAN programming. He suggested that we substitute CSCI 240 for CSCI 230 in our requirement for the BS in Economics. The members of the Undergraduate Committee examined the courses offered by Computer Science and agree that this is a good substitution, especially because C++ is often used in financial economics.
point average of at least 3.00 in courses used toward the CGS in Financial Engineering. Courses completed for the CGS in Financial Engineering may also be used to satisfy requirements for graduate degree programs.

Program prerequisites:
- familiarity with undergraduate financial economics
- computer programming in a language such as C, C++, Fortran or Java

Students not satisfying the above prerequisites may be required to take the following courses:
- ECON 661 – MACROECONOMIC ANALYSIS I (2)
- ECON 661B – FINANCIAL MARKETS (1)
- CSCI 689 – OBJECT-ORIENTED DESIGN AND PROGRAMMING (3)

Requirements (9)
- STAT 583 – Stochastic Processes I (4)
- ECON 584 – Financial Derivatives (3)
- ECON 791 – Computational Economics (2)
  [MATH 535, Numerical Analysis, may be substituted for ECON 791 with consent of department.]

Electives (6)
Two courses, including at least one CSCI course, must be chosen from the courses listed below:
- CSCI 531 – Parallel and Distributed Programming Models (3)
- CSCI 532 – Programming Non-Traditional Architectures (3)
- ECON 642 – Financial Engineering (3)
- ECON 649 – Algorithmic Trading (3)
- ECON 740 – Financial Economics I (3)
- ECON 743 – Financial Economics II (1-6)
- ECON 795 – Internship in Economics (1-6)

Course List (ECON)

Rationale: The purpose of the CGS in Financial Engineering to provide students with rigorous training in the tools and concepts of financial engineering so that they can obtain jobs and advance their careers in the financial industry. The proposed CGS is distinguished from programs in finance and financial engineering at other universities in that it places a strong emphasis on fundamental concepts in economics.

Relative to the size of the financial industry in Chicago, there are very few quality programs in financial engineering in the metropolitan area. Existing programs almost entirely focus on mathematics and computational foundations and finance applications. Because little economics is incorporated in the curriculum, these programs largely provide training in the application without incorporating higher level issues of design and scope. The proposed CGS in Financial Engineering will educate students about
fundamental economic concepts and financial applications. This is an independent Certificate program that does not require concomitant enrollment in a graduate program. However, we have designed the CGS so that students enrolled in various graduate programs, such as Financial Risk Management, Economics, Computer Science, Mathematics, and Statistics and Probability, may complement their degree programs and enhance their employment and career prospects by completing the CGS.

With one exception, the courses for the CGS in FE are already approved and are part of the curriculum for the new MS in Financial Risk Management offered with the Department of Finance that is scheduled to start in Fall 2016. (A request for the only new course, ECON 649, has been concurrently submitted to the Curriculum Committee.) Note that the CGS in FE curriculum does not include courses offered by the Finance Department. Students enrolled in the interdisciplinary MS in FRM program will take a variety of courses in finance, economics, computer science, and statistics, but the curriculum of the CGS focuses on economics and computer science skills. Students in the MS in FRM are not required to complete the CGE in FE, but may choose to do so while earning the MS. Because the CGS in FE is designed to complement several graduate programs, we expect there will be strong demand for the CGS in Financial Engineering.

The CGS in Financial Engineering will benefit NIU indirectly in many ways by

1. Fostering collaboration with the financial industry in Chicago. The program will raise the profile of Northern Illinois University and may lead to joint ventures with the financial industry.
2. Strengthening and complementing existing graduate programs at NIU. The new courses will be open to students in several graduate programs to provide them with a financial engineering education. Advanced economics PhD students also will gain valuable experience as teaching assistants for the new courses in financial engineering.
3. Building a bridge to the new MS in Financial Risk Management. The Departments of Finance, Economics, Computer Science, and the Division of Statistics have developed the interdisciplinary MS in FRM to begin in Fall 2016. This CGS will provide students with a bridge to enrollment in that program.

We anticipate no additional costs for the proposed Certificate of Graduate Study in Financial Engineering because the CGS utilizes courses offered for the new MS in Financial Risk Management and the recently approved Concentration in Financial Economics in the MA in Economics program. The Department of Economics has requested one additional faculty member for staffing the new MS in Financial Risk Management and the recently approved Concentration in Financial Economics in the MA in Economics program. However, once staffed, the courses taught for these programs will be available for the CGS in FE. Similarly, the cost of resources for teaching and research for the CGS, such as access to CRSP, Datastream, Compustat, Wharton Research Data Services and related databases, are incorporated in the design of the MS in Financial Risk Management.

Non-Duplication/Impact Statement: The Department of Computer Science, Finance, Statistics, and the College of Engineering & Engineering Technology were notified with regard to this program and have indicated there is no significant duplication with any of their current program offerings. Please note that the CGS in Financial Engineering is embedded in the new MS in Financial Risk Management that the Department of Economics will be offering jointly with the Department of Finance beginning in Fall 2016.
Department of Geology and Environmental Geosciences

New Course Page 284, 2015-16 Undergraduate Catalog

CIP Code: 40.0601

200. GEOSCIENCE CAREER PREPARATION (1). Development of professional skills and attitudes necessary for employment in geoscience-related fields. Topics include résumé creation, interviewing techniques, professional networking, technical writing, personal marketing, and career path identification. PRQ: Declared major in geology and environmental geosciences.

Rationale: Recent, informal surveys of geology and environmental geoscience students, as well as formal assessment data collected over a number of years, suggest that our students lack an understanding of the myriad career opportunities in geoscience-related fields. Not only do they lack an understanding of the kinds of jobs they can acquire, they also lack an appreciation of the skills and attitudes that employers are looking for in their employees. This course is intended to formalize the delivery of what was in the past an informal mentoring system wherein faculty and advisors communicated irregularly and inefficiently with students regarding how best to prepare for life after NIU. This approach left some students without this type of preparation, or gave it to them much too late in their academic career for it to have a useful impact. Our expectation is that all majors will take this course as early as possible in their degree program so that they can rapidly identify a career path and then build their portfolio of academic and professional skills to help them gain employment upon graduation. The course will give students an opportunity to learn from successful alumni, professional geoscientists, graduate students, and NIU career services staff. We firmly believe it will improve recruitment, retention, and the career success of our students.

Notification/Non-Duplication: A thorough search of the course catalog was completed. No other course offerings with similar content were found. There are analogous courses in Geography (GEOG 300) and Environmental Studies (ENVS 400). Each of these courses is specifically tailored to the majors in their specific program, however, and they therefore do not duplicate what we intend to offer in this course. The objectives of the courses are similar, but this course is only available to geology and environmental geoscience majors, and its content is specifically tailored to their academic and career success.