

Supplement to:
1995-97 Northwestern Undergraduate Study

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last updated: Nov 13, 1997

Supplement to: **1995-97 Northwestern Undergraduate Study**

School of Education and Social Policy

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Note: The Organizational Studies program has been discontinued. The Learning and Organizational Change program has been established for those students interested in exploring how organizations and the individuals within them respond to and implement change through education and organizational redesign. The program addresses forces of change including technology, globalization, and changing demographics by drawing upon innovations in learning sciences and organizational behavior. Students learn ways to increase individual, group and organizational effectiveness, particularly within workplaces and schools.

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Change *Organizational Studies* to *Learning and Organizational Change*

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Honors

Delete: The three-quarter program begins with registration for 225-C99 Independent Study with the honors project adviser.

Replace with: Fall quarter, students register for 210-C98 Honors Thesis.

Academic Programs

Change *Organizational Studies* to *Learning and Organizational Change*

top left hand side, sixth line down, sentence should read: The programs are especially appropriate for those seeking careers in management, consulting, clinical psychology, social work, counseling, law, public service, human resources, and public sector management.

Delete ¶ beginning with: "The Organizational Studies Program is well suited ..."

Replace with: The Learning and Organizational Change Program is well suited to students who plan careers in management, consulting, training and human resources in profit and not-for-profit organizations. Students combine core course work in learning sciences, organization behavior, psychology and social policy with the necessary work in economics, quantitative methods, communications and technology that will prepare them for careers as organizational leaders and change agents and for graduate study in the social sciences and management.

Intellectual Core

All students must complete the School of Education and Social Policy intellectual core. The core course 210-B05 Undergraduate Proseminar introduces the concepts, research, methods, and faculty from across SESP. Students choose from one of two human development courses to gain a basic understanding of development through a particular cycle of the life span in 225-C01 Human Development: Childhood and Adolescence *or* 225-C02 Human Development: Adulthood and Aging. They choose *one* course from the following list which further adds to the understanding of human development and learning: 210-B12 Learning and Understanding: A Cognitive Science Approach, 225-C01 Human Development: Childhood and Adolescence, 225-C02 Human Development: Adulthood and Aging, 225-C12 Development of African-American Children and Families: Theory and Research, 225-C13 Development of African-American Children and Families: Research and Policy, 225-C18 Adult Development and Work Careers, 225-C17 Gender and the Life Course *or* 225-C19 Family Development in Changing Society. Students must demonstrate theoretical and practical mastery of quantitative and conceptual analysis by completing two research methods courses, 473-B06 Elementary Statistics for Research and 225-C72 Methods of Observing Human Behavior. Students must complete 225-C72 before undertaking the practicum and practicum analysis seminar component of the intellectual core.

In the practicum component...(continue on with original catalog copy).

Individually Planned Programs

Change Organizational Studies to Learning and Organizational Change

Social Policy

delete second paragraph

change second paragraph to: Students are required to take the introductory course 225-B01 Introduction to Social Policy and any *three* of the following four courses: 225-C04 Social Policy and the Human Services, 225-C07 Educational Policy, 225-C11 The Political Economy of Social Policy and 225-C30 Economics of Social Policy.

Psychological Services

delete second paragraph

change second paragraph to: Students are required to take the introductory course 230-C01 Introduction to Counseling and any *three* of the following four courses: 225-C04 Social Policy and the Human Services, 230-C02 Human Personality, 230-C03 Intervention Strategies and 230-C11 Group Dynamics.

Delete ¶s regarding Organizational Studies.

Replace with:

Learning and Organizational Change

The Learning and Organizational Change Program is an innovative concentration which embodies technology, internationalization, changing demographics, and new discoveries about effective learning and organizational behavior in order to teach students ways to increase effectiveness within organizations.

Required concentration courses include 210-B11 Introduction to Organizational Theory and Practice, 210-C01 Learning in Context, 210-C02 Education and Work, 210-C06 Studies in Organizational Change, and 210-C10 Learning Organizations for Complex Environments. The remaining units are composed of other required courses and electives approved by the student's adviser, to complete the 45 unit degree requirement. Students planning to do graduate work in management are encouraged to take at least three courses in economics, including Economics C11 Microeconomics. At least eight of the concentration courses must be at the C level.

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Professional Core

Change 236-B41 Methods and Techniques of Teaching at the Secondary Level to 236-C41 Teaching and Learning in Social/Cultural Contexts

Change *Tutorial in Education: Co-teaching to Methods & Techniques: [subject area]*

page 134

Art

Related courses: six courses related to art in one CAS department *are recommended*.

page 135

Math

Related courses: four related courses taken in one department other than mathematics *recommended*.

Sociology

16 course units

Introductory: *two A or B-level sociology courses*

Theory and methods courses: 471-B26; C03; C06; one course chosen from C29 or C69

Two C-level sociology courses

U.S. history: four courses

World history: four courses

Learning Sciences

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Courses Primarily for Freshmen and Sophomores

210-B05 Undergraduate Proseminar

delete description and replace with: Introduces students to the roles of educators, policy makers, business leaders and human service professionals and the methods they use in addressing societal issues. SESP faculty research and themes are explored.

210-B11 Introduction to Organization Theory and Practice

delete description and replace with: Major theories and research explaining organizational behavior at the individual, group and organizational levels are explored and applied through real organizational experiences of students. Special emphasis on the role of learning as it interacts with organizational mission, structure and process of motivation and leadership.

Courses Primarily for Juniors, Seniors, and Graduates

Add the following courses:

210-C01 Learning in Context: Cognitive Science Foundations of the Learning Sciences

Cognitive and social science theories of how people learn to understand, reason, and solve problems. Implications for the design of classroom learning environments; learning in real scenarios.

210-C02 Education and Work

Changing nature of work and how this impacts the skills that will be needed for work in the next century. Design of education for teaching skills needed for work in the next century.

210-C06 Studies in Organizational Change *delete description and replace with:*

Theories and methods of organizational learning and change are examined and applied to change projects in workplace organizations by student teams.

210-C10 Learning Organizations for Complex Environments

Examines major change factors including technology, globalization and demographics, their impact on workplace organizations. Ways organizations are creating and responding to these changes through organizational design, learning systems and human functional changes are explored.

Human Development and Social Policy

Courses Primarily for Juniors, Senior, and Graduates

Add the following courses:

225-C05 Law and Social Policy

Explores the influence and use of the legal system on social institutions and policy.

225-C07 Educational Policy

Explores conflicts between offering opportunity to youth and societal imperatives for selecting and preparing youth for future careers. Focuses on how society and schools deal with this conflict, and on various approaches to policy reform.

225-C12 Development of African-American Children and Families: Theory and Research

African-American children and families from a holistic, multi-disciplinary, and developmental perspective. Phases in child and family life cycles linked to ecological factors in the society. Historical-

evolutionary approach.

225-C18 Adult Development and Work Careers

Adult development and work careers viewed through the perspectives of three disciplines: psychology, sociology, and organizational behavior. Examines individual career-development strategies and alternative career systems.

225-C30 Economics of Social Policy

How economists think about social policy issues. Examines economic models of household decision-making and how economists account for costs and benefits of public and private programs and decisions.

Counseling Psychology

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Courses Primarily for Juniors, Senior, and Graduates

Add the following courses:

230-C02 The Human Personality

Examines different psychological ways to comprehend the whole person in his or her complex societal and historical context. Classic and contemporary approaches to personality, psychology, underscoring both theory and research.

230-C03 Intervention Strategies

Intervention strategies in the areas of human development, education, psychological well-being, and social welfare within a social ecological framework emphasizing long-term change in people and social environments.

Teacher Education

Courses Primarily for Juniors, Seniors, and Graduates

*Change 236-B41 Methods and Techniques of Teaching at the Secondary Level to:
236-C41 Teaching and Learning in Social/Cultural Contexts*

236-C03 Problems in the Philosophy of Education

Focus of the course is upon classical and modern philosophies of education. Text interpretation, analysis

of ideas, and argument construction are stressed as is the relation of philosophy to educational issues. Students are asked to develop a philosophy of education.

Add the following courses:

236-C23 Foundations of Reading and Language Acquisition

Emphasizes cognitive foundations of processes in reading comprehension and their influences on methods of instruction and assessment. The inter-relationships among reading processes and language learning and their implications for instruction and assessment are explained.

236-C25 Foundations of Writing Processes (Secondary)

The course explores cognitive and socio-cultural foundations of writing processes and their implications for writing instruction and assessment, includes supervised field experience.

Change the following course titles:

236-C54 Methods and Techniques: Art

236-C55 Methods and Techniques: Foreign Languages

236-C56 Methods and Techniques: English

236-C57 Methods and Techniques: Secondary Mathematics

236-C58 Methods and Techniques: Sciences

236-C59 Methods and Techniques: Social Sciences

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Last Updated: September 20, 1996

Supplement to: **1995-97 Northwestern Undergraduate Study**

Medill School of Journalism

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Program of Study for the Degree of Bachelor of Science in Journalism

following the first paragraph:

Medill provides a compact core of journalism courses for its undergraduates. In the first year, students take two journalism courses: Editing and Writing the News, for a grounding in journalistic skills, and History and Issues of Journalism, for an understanding of the history of media institutions in the United States. Newswriting and Reporting, taken the sophomore year, is designed to hone writing skills.

From there, students will take two media-specific courses that lead into the junior-year program called Teaching Media. Magazine Writing I and Magazine Editing I prepare students for Teaching Magazine; Newspaper Editing and Writing I and News and New Media prepare students for Teaching Newspaper; and Broadcast Writing and TV News Editing I prepare students for Teaching Television. (Students are asked in their sophomore year to select one of the three junior year Teaching Media programs.) These programs offer a professional laboratory in which students study under the supervision and guidance of editor-instructors, monitored and supervised by Medill faculty. Students who encounter financial hardship while on these programs may apply to the school's Benjamin H. Baldwin Fund for additional support.

In their senior year, students usually take four courses: Law and Ethics of Journalism and three others chosen from a pool, including courses in newspaper, magazine, or broadcast journalism, advertising, direct marketing, and other journalism electives. Certain journalism electives may be taken before the senior year.

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Requirements for the Degree of Bachelor of Science in Journalism

point 4. should read;

4. Required journalism courses for freshmen entering in the fall 1996 and beyond:

B01-0 Editing and Writing the News

B02-0 History and Issues of Journalism

C20-1 Newswriting and Reporting

C26-0 Law and Ethics of Journalism

C21-1 Newspaper Editing and Writing I

or C60-1 Broadcast Writing

or C80-1 Magazine Writing I

C41-0 News and New Media

or C62-1 TV News Editing I

or C81-1 Magazine Editing I

C20-2 Reporting (1-2 units of credit)

or C60-2 Broadcast News (2 units of credit)

or C80-2 Magazine Writing II (2 units of credit)

C21-2 Newspaper Editing and Writing II (1-2 units of credit)

or C62-2 TV News Editing II

or C81-2 Magazine Editing II

C26-0 Law and Ethics of Journalism

In addition to C26 Law and Ethics of Journalism, seniors take two or three elective journalism courses from the following list.

B03-0 Advertising (open to all undergraduates)

B04-0 Direct Marketing (open to all undergraduates)

B10-0 Communication and American Democracy (freshmen given priority)

C21-1 Newspaper Editing and Writing I

C24-0 Investigative Journalism

C25-0 Advanced Newspaper Reporting and Writing

C41-0 News and New Media

C60-1 Broadcast Writing

C61-0 Broadcast Reporting

C62-1 TV News Editing I

C80-1 Magazine Writing I

C81-1 Magazine Editing I

C90-0 Special Topics

C99-0 Independent Study

Students may take both B03 and B04 only if one of these courses is a 12th journalism unit. Of the 11 journalism units required for the BSJ degree, 10 must be editorial courses.

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Courses

insert the following prior to "Required Courses":

In the 1996-97 academic year Medill is introducing a revised journalism curriculum for the entering class of 1996. You should refer to the School's own "Undergraduate Handbook" (available in Fisk Hall, room 209) for more detailed information on these changes.

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Last Updated: September 20, 1996

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College of Arts and Sciences

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College of Arts and Sciences

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Under Minors, after the sentence beginning "Specific minor requirements. . . ," insert the following:

With limited exceptions, courses used to fulfill the requirements for a minor cannot be applied to meet the major requirements of a student's major(s). However, a course used as a prerequisite course or a related course in a major program may be used to fulfill a minor requirement. In addition, a small number of majors and minors, usually of an interdisciplinary nature, allow a stated number of required major courses to be double-counted in another major or in a minor. Details are given in the listing for each of these majors and minors. Students with questions concerning double-counting should consult an adviser in the CAS Office of Studies.

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Academic Options

Unaffiliated Programs

add:

Concentration in the School of Music for CAS Students

Beginning Fall 1996-97, of a concentration in Musical Studies through the School of Music is available to CAS students. A complete description of the concentration can be found at the end of this introduction. Students who complete the concentration will have this noted on their transcript.

Declaration of Concentration

CAS students desiring to pursue a music concentration should speak with the Assistant Dean for Undergraduate Studies in the School of Music and fill out a "Declaration of Concentration" form.

The form, signed by the Assistant Dean of Music, should then be returned to the CAS Office of Studies, which will record the concentration. One year prior to graduation, students pursuing a music concentration should petition in the School of Music, office of the Assistant Dean, to have the concentration certified for their transcripts.

Prerequisites

Students seeking admission to the concentration should be able to read music, and should have modest experience in musical studies and in performance. Students without prior training in music should enroll

in 501 A70 as prerequisite, and additional work in musical fundamentals may be required by the Assistant Dean for Undergraduate Studies in Music.

Music 501 A70 is a prerequisite to 501 B70-1 and B70-2. B-level courses or the equivalent competencies are frequently prerequisites for C-level courses. Students should consult with the undergraduate dean in the Music School and check the Undergraduate Bulletin to determine the prerequisites for specific courses.

Rules Governing the Music Concentration

Registration for this concentration is limited to students entering their sophomore or junior year in Fall 1996/97. Fifteen students will be accepted initially in the concentration.

A CAS student may pursue at most one Music concentration. A CAS student is free to pursue one or more majors, a (single CAS) minor, and a (single) music concentration, subject to the double-counting restrictions given below.

Music students may not pursue a concentration. Should a CAS student pursuing a concentration transfer from CAS to music, s/he will no longer be eligible for the concentration.

P/N registration may not be used for required courses in the concentration. Course credit transferred from institutions outside NU is not applicable to this concentration. A course counted towards the concentration may not also be used to fulfill requirements for any CAS major or minor.

Concentration in Music Studies (6 credits)

The concentration in musical studies emphasizes the historical and analytical aspects of music study. The curriculum requires studies in harmony, form and the analysis of Western music, as well as exposure to the varieties of genres within the European-American historical traditions, and musics of non-Western cultures.

Prerequisites: 501-A70-0 Introduction to Music, or equivalent, the ability to read music. Section 1 is prerequisite to Section 2. Requirements within each section may be taken in any order. Students must earn a grade of A or B in all courses taken within section 1 before enrolling in section 2. At least one course in the study of ethnomusicology or world musics is required within sections 1 or 2.

Section 1 (3 credits)

Both of the following: (1 credit each)

501-B52-0 Harmony
501-B53-0 Form and Analysis

One of the following: (1 credit each)

501-B70-1 Western Musical Tradition

501-B70-2 Western Musical Tradition
501-B20-0 History of the Symphony
501-B30-0 Masterpieces of Opera

Section 2 (3 credits)

One of the following, or an approved course in ethnomusicology in program 530: (1 credit each)

530-C23 Proseminar in Ethnomusicology
530-C26-1 or 530-C26-2 Music of the World's Peoples
530-C37 Improvisation and World Musicianship
530-C38 African Mbira

Two of the following: (1 credit each)

530-C30 Selected Topics in Music History
530-C50 History of Music - Middle Ages
530-C51 History of Music - Renaissance
530-C52 History of Music - Baroque
530-C53 History of Music - Classical
530-C54 History of Music - Romantic
530-C55 History of Music - Modern
535-C13 Selected Topics in Music Theory
535-C16 Baroque Counterpoint
535-C17 Renaissance Counterpoint
535-C21 Analytical Techniques
535-C31 Analytical Studies
535-C52 Score Analysis Skills

Concentrations in the School of Speech for CAS Students

Beginning Fall 1996/97, four concentrations in the School of Speech are available to CAS students: Media Studies, Political Communication, Arts Criticism, and Human Communication Sciences & Public Policy. A complete description of each concentration can be found following this introduction. Students who complete a concentration will have this noted on their transcripts.

Declaration of Concentration

CAS students desiring to pursue a Speech concentration should fill out a "Declaration of Concentration" form at the CAS Office of Studies, which will record the concentration.

Registration for Speech concentrations is limited to students entering their sophomore or junior year in Fall 1996/97. At the request of the School of Speech, 10 students will be accepted initially into each concentration.

A year prior to graduation, students pursuing a Speech concentration should petition in the School of Speech, Office of the Dean, to have the concentration certified for their transcripts.

Prerequisites and Registration

General Speech A03 is the prerequisite for 605 B10-1,2,3. With those exceptions, there are no A-level prerequisites for any course in these concentrations.

However, B-level courses are frequently prerequisites for C-level courses. Students should check the Undergraduate Study catalog to determine the prerequisites for specific courses.

Certain Speech courses, marked with "*", require permission for registration. CAS students pursuing a Speech concentration may request space in these courses from 8:30 a.m. to 4:30 p.m. on the Thursday following Speech preregistration in Annie May Swift, Room 201.

Rules Governing Speech Concentrations

A CAS student may pursue at most one Speech concentration. A CAS student is free to pursue one or more majors, a (single CAS) minor, and a (single) Speech concentration, subject to the double-counting restrictions given below.

Speech students may not pursue a Speech concentration. Should a CAS student pursuing a concentration transfer from CAS to Speech, s/he will no longer be eligible for the Speech concentration.

P/N registration may not be used for required courses in the concentrations. Course credit transferred from institutions outside NU is not applicable to these concentrations. A course counted towards one of these concentrations may not also be used to fulfill requirements for any CAS major or minor.

The Concentrations

Option I: Media Studies (6 credits)

The concentration in Media Studies is designed to educate students to understand and participate in a world increasingly filled with cultural artifacts, entertainment, and information produced and disseminated by the media. Through study and research, students gain insights into the role of media and culture and the ways the media shape our lives from the personal, local level to the public and global arena.

*615-B98 Studies in Media Topics
615-B20 Introduction to Film History & Criticism

One from the following:

*615-B01 Mass Media & Society
615-B02 Introduction to Popular Culture: The Mass Media

610-B70 Theories of Mass Communication

Three from the following:

- *615-C10-1,2 History of Broadcasting
- *615-C12-1,2 History of Film
- *615-C26 Mass Media Criticism
- *615-C41 Technological Innovations
- *615-C43 Political Economy of Mass Media
- *615-C50 Telecommunication Policy
- *615-C53 National Mass Media
- *610-C85 Mass Media Economics
- *610-C86 Legal & Political Dimensions of Telecommunication

Option II: Political Communication (6 credits)

Much of what we call politics takes place in and through communication. The concentration in Political Communication investigates the process of human communication within a political context. Attention is given to public opinion formation and change, information campaigns, and historical and critical studies of political discourse.

To begin this concentration, students must have completed a research methods/statistics course.

601-A20 Communication & American Democracy

Two from the following:

- 610-B05 Theories of Persuasion
- 610-B20 Theories of Argumentation
- *610-B25 Forms of Public Address
- 610-B70 Theories of Mass Communication
- 610-B75 Rhetoric of Contemporary Culture

Three from the following:

- *610-C21 Public Argumentation
- 610-C25-1,2,3 Rhetorical History of the United States (you may only count one of these C25 courses)
- 610-C27 Contemporary Rhetorical Practice
- *610-C30-1,2 Contemporary Problems in Freedom of Speech
- *610-C71 Public Opinion
- *610-C72 Mass Communication and Campaign Strategies
- *610-C80 Political Communication
- *610-C85 Mass Media Economics

Option III: Arts Criticism (6 credits)

The concentration in Arts Criticism investigates the process of criticism within the context of performance. The focus is on methods of criticism as applied to drama, dance, film, narrative

performance of literature, and contemporary rhetoric.

*605-A03 Analysis & Performance of Literature

Two from the following:

*605-B10-1 Performance of Poetry

*605-B10-2 Performance of Narrative Fiction

*605-B10-3 Performance of Drama

*610-B15 Principles of Rhetorical Criticism

615-B20 Introduction to Film History & Criticism

631-B30 History of Dance

630-B44-1,2 Development of Contemporary Theatre

610-B75 Rhetoric of Contemporary Culture

Three from the following:

*605-C11 Performance in Everyday Life

*615-C12-1,2 History of Film

*615-C13-1 Documentary Film: History & Criticism

*615-C20 Modes of Film and Television Communication

*615-C22 Radio/TV/Film Genre

*615-C23-1 Experimental Film: History & Criticism

631-C30 Dance Criticism

630-C45-1,2,3 History of Western Theatrical Practice

630-C65 American Theatre & Drama

*610-C75 Rhetoric & the Arts

*610-C77 Rhetoric of Cultural Genres

*610-C78 Rhetoric & Aesthetic Theory

Option IV: Human Communication Sciences & Public Policy (5 credits)

The concentration in Human Communications Sciences and Public Policy provides an introduction to the study of normal and disordered human communication. Attention is paid to special services mandated by federal law and other issues of public policy.

601-A08 Processes & Pathologies of Human Communication

One from the following:

620-B01 Phonetics

620-B02 Biological Foundations of Human Communication

620-B05 Introduction to the Study of Learning and Learning Problems in Children

Three from the following:

620-C09 Culture, Language, & Learning

624-C30 Multicultural Perspectives on Speech and Language Disorders
624-C36 The Field of Special Education
621-C66 Introduction to Aural Rehabilitation
623-C73 Introduction to Learning Disabilities
623-C75 Diagnostic Procedures for Exceptional Children

Important notice concerning Honors in CAS

Guidelines and requirements for honors in all CAS departments and programs recently have changed. For details consult either the department or the CAS Honors booklet, available fall 1996 in the CAS Office of Studies, 1922 Sheridan Road.

American Culture Program

Pages 47-48

The name of the American Culture Program has officially been changed to "American Studies Program." All references to the program should incorporate this change.

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Under 418-C90-1,2,3 Senior Project, delete the sentence "With permission, majors may take both C90 and C01 senior year."

Anthropology

page 48-49

Replace all text under Program of Study for Departmental Majors by the following:

Students are expected to complete a 16-course program for a major in anthropology (twelve in anthropology, four in related fields). The department's four required B-level courses provide background in the four major sub-fields. C70, Anthropology in Historical Perspective, examines the philosophical and historical roots of the discipline. C62-1 Quantitative Methods of Analysis and C88 Research Design introduce students to research design issues and four additional courses in the major at the C-level develop the student's intellectual maturity in the discipline. All students are required to take a C98 Senior Seminar and to prepare a Senior Thesis. This requirement provides students with an opportunity to conduct original research and in the process gain valuable analytic, critical thinking and writing skills.

Prerequisites: B11, B13, B14, and B15. Students with previous background may petition to substitute a C-level course for a B-level requirement.

Major Courses:

Two courses in methods: C62-1, C88. In the case of archaeology and cultural/linguistic students, an additional sub-field methods course is required (see C-level requirements listed below).

C70

Four additional C-level courses. The four courses should be selected in consultation with the student's adviser. Normally, these courses are chosen from one of the three subfields listed below but students may, after consultation with and approval of their department adviser, develop a focus that bridges the subfields of anthropology (e.g., culture and technology, medical anthropology, the institutionalization of power).

Archaeology: four courses from among C01, C02, C11, C21 (offered in summer), C22, C25, C29, C81, C84, C90, C91, C96 (offered in summer). (One of these courses must be C22 Introductory Archaeological Methods or C25 Archaeological Methods Laboratory.)

Biological anthropology: four courses from among C06, C10, C12, C13, C17, C90.

Cultural/Linguistic Anthropology: four courses from among C10, C11, C20, C30, C32, C41, C47, C50, C54, C60, C76, C77, C83, C89, C90, C92, C95. (One of these course must be C89 Ethnographic Methods and Analysis.)

C98 Senior Seminar and Senior Thesis (senior year)

Related courses: subject to the approval of the department adviser, four quarter courses, at least two at the C-level, from other departments and programs. These courses should be planned to relate to the student's independent research work and also to strengthen the focus that guided the selection of C-level courses in anthropology.

Page 49

Replace all text under Program for the Minor by the following:

The goal of the minor in anthropology is to provide students in other fields a framework to pursue a particular focus within the discipline. Such a focus might be within one of the subfields of anthropology (i.e., biological anthropology, archaeology, cultural anthropology, anthropological linguistics), or in area studies (e.g., Africa, the Middle East, the United States) or in some other fields (e.g., ethnicity, gender, the origins of the state, urban studies). To fulfill this goal, the minor in anthropology combines two of the four B-level courses required of majors in anthropology, one in the area of ethnography (B11 or B15) and one in the area of origins (B13 or B14) with five C-

level courses that constitute a coherent focus. The B-level courses provide a foundation for pursuit of specialized topics.

Minor course requirements (7 units)

One Unit: B11 Culture and Society or B15 The Study of Culture through Language

One Unit: B13 Human Origins or B14 Culture Origins

A coherent combination of five C-level courses in anthropology with a specific focus. Depending on the focus selected, a methods course may be required as one of the five C-level courses.

Students pursuing the minor in anthropology must consult with the department's director of undergraduate studies to establish a program and be assigned a departmental adviser.

Sample programs: Students majoring in biology but with an interest in ecology and behavior would build a coherent minor in biological anthropology by taking B13 and B11 or B15 and a focused course selection such as C06 Evolution of Life Histories, C10 Evolution and Culture, C12 Human Genetics, C13 Anthropological Population Genetics, and C83 Ecological Anthropology. Students majoring in history with an interest in pre-and early history would build a coherent minor in archaeology by taking B11 or B15 and B14 and a focused course selection such as C01 Hunter-Gather Archaeology, C02 Origins of Civilization, C29 Near Eastern Prehistory, C81 North American Prehistory and C22 Introductory Archaeological Methods. Students with an interest in political science with an interest in non-institutional or non-governmental political processes would build a coherent minor in cultural anthropology by taking B13 or B14, B11 and a focused course selection such as C11 The Indians of North America, C20 Peoples of Africa, C32 Strategies of Marriage and Reproduction, C41 Economic Anthropology and C47 Political Anthropology. Other programs for the minor in anthropology can be designed to meet a student's particular needs or interests.

Note: Students who are following the previous department curriculum should consult with the Director of Undergraduate Study.

Replace all text under Honors in Anthropology by the following:

Students wishing to be considered for the departmental honors program should make inquiries no later than spring quarter of the junior year. In order to be eligible for honors the student must have a 3.5 grade point average in anthropology courses. Enrollment is required in one quarter of a C99 Independent Study or in an appropriate graduate-level course in addition to the C98 Senior Seminar that is required for all majors. The C99 should be taken before enrolling in the C98 Senior Seminar. A student who meets the above requirements and who prepares an outstanding Senior Thesis will be awarded honors in anthropology.

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Add:

403-C27-0 South Asia Before the Buddha

Overview of South Asian prehistory from the Palaeolithic to the Early Historic period. Transition to agriculture, development of social stratification, urbanism, states, and empires. Consideration of processes of cultural, religious, and economic change. Prerequisite: A12, B14 or permission of instructor.

Page 51

Add:

403-C88-0 Research Design

Introduction to fundamentals of research design; overview of major types of designs, data collection and analysis strategies; managing and analyzing data from multiple sources. Students will prepare a research design for their specific topic. Prerequisite: C62-1 or permission of instructor.

403-C98-0 Senior Seminar

Provides supervised group and individual discussion of research in preparation of senior thesis. Required of all majors. Prerequisite: C88.

Asian Studies Program

Page 55

Under Program of Study for the Major, replace the first sentence of the paragraph beginning "With the adviser's consent..." by the following:

With the adviser's consent, students may substitute six quarter-courses of language study in Arabic, Chinese, Hebrew, Japanese, or Korean for two courses in each of the three departmental clusters.

Biological Sciences, Undergraduate Program in

Page 56

Under Program of Study for Majors, Areas of Concentration, Biochemistry and Biophysics, replace " Concentration: C01, C22, C23, Chem C42-1" by " Concentration: C01, Chem C42-1, plus any two of: 409-C60, C61, C62"

Page 57

Under Research/Independent Study/Honors Program, insert the following paragraph to precede the last paragraph beginning "The most modern research facilities...":

In general, a research project leading to honors cannot be pursued outside C99 in a paid or unpaid job. The only exceptions are cases in which the supervisor is a participant in the UPBS Honors Program and an appropriate research/study plan has been approved by the Honors Coordinator.

Under Integrated Science Program, replace "Biochemistry and biophysics: C22, C23" by "Biochemistry and biophysics: C60, C61, C62."

Page 58

Add:

409-A24-0 Biological Clocks

Primarily for non-majors. Introduction to the study of daily and annual biological rhythms, their mechanisms, and their effects on human health, performance, and society. Research techniques and scientific method emphasized. No credit after or while taking any part of 409-B10.

Change 409-C09 to read:

409-C09-0 ISP Biochemistry and Molecular Biology

Biochemistry including intermediary metabolism and macromolecules; fundamentals of molecular biology and cellular genetics. Lecture and laboratory. Prerequisites: ISP enrollment; 409-A90 or equivalent; 411-B12-1 or equivalent.

Page 59

Add:

409-C61-0 Biophysics of Macromolecules

Structure and function of biological macromolecules, and methods in molecular biophysics. Examples of topics: X-ray crystallography; NMR methods for structure and dynamics; absorption and fluorescence spectroscopy; ultracentrifugation; electron microscopy, crystallography, and tomography; applications to proteins, nucleic acids, and membranes. Prerequisites: Chem B10-2, Math B14-2, Physics A35-3; or consent of instructor.

409-C62-0 Biophysics of Macromolecular Systems

Biophysics of macromolecular assemblies, organelles, and cells. Topics will vary year to year, but examples include: molecular motors; signal transduction assemblies; photosynthesis; muscles; ion transport; and biophysical methods used. Prerequisites: Chem B10-2, Math B14-2, Physics A35-3; or consent of instructor.

409-C89-0 Biology of Reproduction

Molecular aspects of gametogenesis and fertilization; intercellular communication in testes; signal transduction/receptors involved in fertilization. Prerequisites: 409-B10-3 or ISP C09 *and* consent of instructor.

Business Institutions Program

Page 59

Under Program for the Minor, second paragraph, replace "1810 Chicago Avenue, room 219" by "University Hall, room 001."

Page 60

Under Electives, Option B, replace the list of courses by: "Anthropology C41; Economics C23; History C67; Philosophy B60; Sociology C15."

After Option B, add:

Option A or B

Economics C05, C55; Political Science C71, C73; Sociology B15, C12, C16.

Courses

493-C92-0 Business Institutions Program Internship Seminar

Allows students to relate the scholarship concerning an aspect of corporate culture to experience gained from a previously completed summer internship. Prerequisite: completion of Business Institutions core courses and permission of the instructor.

Chemistry

Page 61

Add:

411-B04-0 Environmental Chemistry

Primarily for Environmental Science majors, but open to all qualified students. Focus on the chemistry of the environment, divided among air, water, and soil; effects on life such as pollution, heating, nuclear emissions, toxicity, and remediation. Lab. Prerequisite: Chem A01, A02, A03, B10-1.

Classics

Page 63

Add:

414-B44-0 The Ancient Novel

Critical approach to "the beginning before the beginning" of the genre "novel," through reading in translation works of ancient Greek and Latin authors.

Cognitive Science Program

Page 64

Under Program of Study for Majors, Basic prerequisites, replace "EECS A10 or A11" by:

C SC A10 or A11

Replace the list of courses after "Intermediate requirements (3 of 4)" by the following:

Intermediate requirements (3 of 4): Ling B05 or B06 or B07, Psych B12, C SC C48, LSCI C01, CSD B02

Replace the description of Advanced electives (6) by the following:

Advanced electives (6): six courses chosen from four areas; at least three must be in one area (major emphasis) and at least two must be outside that area. Other D-level courses not listed below may be substituted for advanced electives with permission of the adviser. A C99 course in taken in one of the departments below may count as an advanced elective. Selected courses from other areas may count as advanced electives. See the cognitive science adviser for the list of approved courses. Asterisks denote courses required for major emphasis in that area.

Under Advanced electives, Anthropology, add: "Anth C60"

Under Advanced electives, Artificial Intelligence, replace "EECS" by "C SC"

Under Advanced electives, Cognitive Psychology, add: "Psych C62"

Under Advanced electives, add the following new category and course list:

Communication Sciences and Disorders

CSD C92, CSD D03, CSD D06, CSD D51, CSD D92, CSD D95

Under Advanced electives, Learning Sciences, add: LSCI D22, LSCI D23, LSCI D29, LSCI D50, LSCI D51

After "Advanced requirement (1): C66", add the following statement:

Double counting in the major. Cognitive science majors who wish to double major are allowed to double count up to four courses towards both majors. However, cognitive science majors seeking a minor in another area or discipline cannot double count for that minor any courses used to meet

the major requirements of cognitive science.

Page 65

Under Minor course requirements (8) units, replace "Methods courses" and the statement and course list by the following:

Methods courses (2 of 4): Psych B01, Psych B05, C SC A10, C SC A11

Under Electives (4), replace the list of areas and courses by the following:

For available areas, see the list under Advanced electives for the major. The courses listed below are required if that area is chosen.

Artificial Intelligence

C SC C48

Cognitive Psychology

Psych B28

Cognitive Neuroscience

Biol B10-3

Learning Sciences

LSCI C01

Linguistics

Ling B05 or B06 or B07

After the requirements for the minor, add the following statement:

Double counting in the minor. Courses used to meet the requirements for the minor in cognitive science cannot be used to meet the requirements for any major in the College.

Computing and Information Systems Program

Under Program of Study for Majors, add the following note:

The department of Electrical Engineering and Computer Science (EECS, dept. no. 727) has become become two departments: Computer Sciences (C SC, dept. no 725) and Electrical Engineering (E E, dept. no. 730). Courses formerly offered by EECS are now offered under the new department headings. Consult the program director for details.

After Program of Study for Majors, add the following:

Program for the Minor

The minor in Computing and Information Systems is designed to provide students with a solid foundation in computer science. Students are exposed to basic concepts in the theory and application of computers. Electives can be used to explore advanced topics in computing and/or the application of computing to a number of other areas.

Prerequisites: Math B14-1,2,3 and Math B17 or equivalent

Requirements for the minor (9 units):

***One of the following pairs (2 units):**

CSC A10 and EE B30

CSC A11 and CSC B11

***All of the following:**

CSC C10

CSC C11

CSC C36

***Electives:**

Any four additional courses allowed as electives or required courses in the Computing and Information Systems major.

Comparative Literary Studies Program

Page 66

Add:

416-B75-0 Arabic Literature in Translation

Introduction to Arabic literary background; survey of literary genres from the pre-Islamic period to the present.

English

Page 72

Under English, replace the first two paragraphs by the following:

Perhaps the most striking thing about the study of English literature is how varied it is. While some scholars and teachers emphasize the formal qualities of literary works, others address such questions as what counts as "literary" and the relationship of literature to society. The particular kinds of texts they examine also differ a good deal, as do their assumptions, methods, and emphases. But the unity behind this variety is a common emphasis on close reading and careful analysis of the written word. The English Department's curriculum reflects this variety and unity, and it offers a major that enables each student to pursue a particular area of interest within a broader understanding of the sweep of literary history and the range of literary study. The department also offers students disciplined training in the writing of verse and fiction. Virtually all of its courses also include practice in the writing of clear, concise, and persuasive expository prose. Rigorous training in thinking and writing is valuable for any career that an undergraduate may ultimately pursue and makes English an attractive major for students preparing for careers

in medicine, law, and business, as well as in the teaching of English at all levels.

The department takes pride in the diversity of perspectives afforded by its courses. In addition to teaching classes in the department, English faculty contribute substantially to the course offerings in theatre and drama, comparative literary studies, and American studies.

Under Programs of Study for Departmental Majors, add to end of first sentence: "and through the departmental web pages, www.english.northwestern.edu."

Replace, beginning "English and American Literature Major" through the paragraph on "Honors in English" (page 73), by:

English and American Literature Major

Prerequisites: two B-level courses.

419-B10, English Literary Traditions

Followed by 419-B98, Introductory Seminar in Reading and Interpretation

Major courses: 11 additional courses.

5 must be within a designated concentration, 6 outside the concentration. Concentrations include: new world and postcolonial literature, medieval literature, British literature 1500-1660 plus Milton, Restoration and 18th-century British literature, 19th-century British literature (including Romantic literature), 20th-century literature in English, American literature, literary criticism and theory, literature and culture, literature and gender, poetry, drama, and fiction.

9 must be at the C level or above

at least 9 must be English Department courses, *literature* courses offered by the African American Studies Department, or courses taught by members of the English Department through other departments or programs and that deal substantially with literary works *originally* written in English, i.e., not in English translation

at least three of these English courses (or acceptable equivalents) must deal substantially with texts written before 1798, at least three with texts written after 1798

at least one class must be in American literature

at least one class must be in literary criticism or theory

There are variations in these requirements in certain concentrations. For more information, students should consult the department office, 215 University Hall, or the web pages (www.english.northwestern.edu).

Related courses: at least two quarters of courses offered in fields outside of literature and related to the student's area of concentration. *Specific listings are available in the department and on the web pages.*

English Major in Writing

A student majoring in English may apply to the major in writing. Unlike the other major options, admission is competitive, and the overall configuration of courses in the writing major is somewhat different from the literature major. The writing major includes the writing of poetry and fiction, but it is not restricted to "creative writing" alone. A required course in prose style and argument encourages students to focus on discursive forms, while a strong literature component and a course in cultural criticism further situate the writing done in the practical workshop courses in poetry and fiction within a context of general literacy.

Admission: Students may apply for admission to the writing major through the English office in the early spring of each year.

Prerequisites: three B-level courses.

419-B10, English Literary Traditions

419-B06, Reading and Writing Poetry, and 419-B07, Reading and Writing Fiction

Major courses:

Either the year-long sequence C93, Theory and Practice of Poetry, or the year-long sequence C94, Theory and Practice of Fiction; C92, The Situation of Writing; and C95, Fundamentals of Prose

5 literature courses, at least two of which must be on works written before 1798, and at least two on works written after 1798

The C-level writing courses will satisfy the major requirement in literary criticism and theory. Other major requirements apply.

Related courses: two courses in fields outside of literature selected with the advice and approval of the student's writing major adviser. Recommended related courses are those that provide a broad historical background for the study of literature

Program for the Minor

The minor in English offers students experience in reading literary texts and writing critical analyses. Two courses in literature before the 19th century are required to ensure historical perspective. Students pursuing the minor will be permitted to preregister in the department after declared English majors.

Minor course requirements (7 or 8 units)

2 or 3 B-level courses: B10, English Literary Traditions, followed *either* by B98, Introductory Seminar in Reading and Interpretation, *or* by B06, Reading and Writing Poetry, *and* B07, Reading and Writing Fiction

5 C-level courses: at least two of which must be in literature written before 1798, and at least two in literature written after 1798; one course may be in comparative literary studies

Honors in English

Literature majors who wish to earn honors may apply during the spring of their junior year for admission to the two-quarter honors seminar, English C98-1,2, which meets the following fall and winter quarters. Each student in the seminar is expected to produce an honors essay. Under the direction of the department honors coordinator, students in C98 discuss their work and issues of common interest, at the same time receiving individual advice on their particular topics from faculty members expert in relevant areas. The aim is to foster intellectual community among the most ambitious students while encouraging outstanding independent work. Admission to the seminar is competitive, and a GPA of 3.4 and a description of a likely topic are among the requirements. Students interested in honors through the writing major should consult with the director of the program.

Page 73

After 419-B07-0, insert:

419 B10-0 English Literary Traditions

Chronological survey of the common history and traditions of English literature from the Middle Ages to the twentieth century in its cultural contexts, emphasizing earlier periods.

Page 74

Replace the current description of 419-B98-0 by the following:

419 B98-0 Introductory Seminar in Reading and Interpretation

Practice in the close reading and analysis of literature in relation to important critical issues and perspectives in literary study. Prerequisite: English B10.

Change "419-C25-0 Spencer" to "419-C33-0 Spencer."

Delete 419-C28-0 Studies in Tudor and Elizabethan Literature.

Page 75

Change title of 419-C69-0 to "Studies in African Literature."

Page 76

Replace 419-C98-0 by:

419 C98-1,2 Honors Seminar

For seniors preparing an honors essay. Students will pursue individual topics with careful guidance while meeting collectively to discuss common issues and present their work-in-progress. Admission by application. K grade given pending completion of essay.

Environmental Sciences Program

Page 76

Under Advanced Studies, add:

Env C90-0

Page 77

Under a new category "Other Courses," add:

422-C90-0 Internship in Environmental Sciences (1-2 credits)

Off-campus participation in research activities of public and private environmental organizations under the supervision of Environmental Sciences faculty. Prerequisite: junior or senior standing

and consent of program director.

Geography Program

Page 82

Under Advanced Courses, add:

421-C43-0 Geographic Information Systems

Methods and techniques of digital cartography; encoding and analysis of spatial information; applications to archaeology, environmental sciences, and business geographics. Prerequisite: C41.

Geological Sciences

Page 84

Under Courses Primarily for Juniors, Seniors, and Graduates:

Under 423-C01-0 Environmental Biogeochemistry, change "Prerequisite: Chemistry A03" to read:

Prerequisite: Chemistry A03 or equivalent

Add:

423-C19-0 Field Problems in Sedimentary Geology

Field methods in stratigraphy and sedimentology; interpretation of depositional systems and development of facies models based on field observations. Continuation of C13 with a 2.5 week field trip to Colorado/Utah in early to mid-September, returning to Evanston in time for beginning of fall classes. Prerequisite: C13

German

Page 85

Under Programs of Study for Departmental Majors, under German Language and Literature, Required courses, change "Three quarters of B01" to read:

Three quarters of B01, or B04 and two quarters of B01

Under German Studies, Required courses, change "Two quarters of B01" to read:

Two quarters of B01, or B04 and one quarter of B01

Under Program for the Minor, Minor course requirements (8 units), change "Four quarter-courses in German literature and culture: two of B01; two chosen from C10-1,2,3,4 and C32" to read:

Four quarter-courses in German literature and culture: two of B01, or B04 and one of B01; two chosen from C10-1,2,3,4 and C32

Page 86

Under Courses in Literature and Culture with Prerequisite in German, add:

425-B04-0 Foundations of Literary Study

Designed to bridge the gap from language courses to literature and culture offerings at the third year level; focuses on the skills needed to work with literary, philosophical, and historical texts. Not to be repeated for credit. Prerequisites: A02-3 or AP of 3 or equivalent or consent of instructor.

History

Page 90

Under Program of Study for Departmental Majors, after the entry " Four additional quarter-courses in history at the B and C levels," add:

the nine B and C-level courses must include one (and no more than one) C-Trailer Sequence, preferably taken in the junior or senior year. A C-Trailer Sequence consists of two courses: a B- or C-level lecture course plus a linked C95 seminar in the subsequent quarter. The C-Trailer Sequence does not have to be in the student's area of concentration.

Humanities, Kaplan Center for the

<http://www.northwestern.edu/humanities>

Under Program for the Minor, replace Minor course requirements and subsequent text by the following:

Minor course requirements (6 or 7 credits)

410-C95-1,2,3 Humanities Seminar (one credit)

Three credits chosen from C01 Topics in the Humanities and C02 New Perspectives in the Humanities

Option A or B:

Option A: Three C-level humanities courses approved by the Center for the Humanities; may include C99

Option B: One C-level humanities course approved by the Center and 410-C95-1,2,3 Humanities Seminar (one credit) with a different topic than that of the above-required C95.

Students applying for the minor must present records showing a minimum of five courses not double-counted in their major.

Mathematics

Replace the current description of 435-C37-1,2,3 Introduction to Modern Algebra by the following:

1. Abstract theory of vector spaces, linear independence and bases, linear transformations and matrices, dual spaces, eigenvectors and eigenvalues, canonical forms, principal axis theorem. 2. Arithmetic in \mathbb{Z} and modular arithmetic, groups and their elementary properties, cyclic groups, permutation groups, groups of symmetries of geometric objects, subgroups, normal subgroups, homomorphisms, quotient groups, isomorphism theorems. Rings, basic properties of rings, polynomial rings. 3. Modules, fields, ring homomorphisms, prime and maximal ideals, field of quotients of a domain, factorization of polynomials, unique factorization domains, principal ideal domains and their modules, constructible numbers and quadratic field extensions, impossibility of certain ruler and compass constructions. Prerequisite: For C37-1, B17, C08 or concurrent registration in C08 or the equivalent. For C37-2, B17 and C08 or the equivalent, C37-1 or permission of the department. For C37-3, C37-2. Students may not take both C37-1 and C34-0 for

credit without permission of the department.

Add:

435-C38-1,2,3 MENU Algebra Course

1. Groups and their structure including the Sylow theorems; elementary ring theory; polynomial rings. 2. Basic field theory; Galois theory. 3. Module theory, including application to canonical form theorems of linear algebra. Prerequisite: C40-1,2,3 or permission of the department.

Philosophy

Page 102

Under Program of Study for Department Majors, under Required courses, change item 2, "History of philosophy" to read:

History of philosophy: B10-1, B10-3, B10-2 or B61, C10

Page 105

Add:

439-C26-0 Philosophy of Medicine

Designed to afford students going into some branch of medicine practice in evaluating ethical problems they are likely to encounter. For example, is the withholding of information from a patient ever ethical; should physicians aid terminally ill patients to commit suicide; and should health care for the elderly be more limited than for children?

Page 106

Add:

439-C80-0 Philosophy of Art

Nature and purpose of art, art and perception, the nature of creativity, and the social responsibility of the artist.

Change 439-C90-0 to read:

439-C90-0 Undergraduate Seminar

Topic varies from year to year.

Physics and Astronomy

Page 102

After the entry for Physics and Astronomy, add the following:

Notices:

- 1. Physics A90-1,2,3 is not currently being offered. Physics majors or minors must take either Physics A25-1,2,3 or A35-1,2,3. Students should consult the Director of Undergraduate Studies, Dr. David Meyer, to determine which sequence is most appropriate for them.**
- 2. Physics C36-1,2 is not currently being offered. Physics majors should take Physics C39-1,2 instead.**

Page 109

Add the following to the description of C39-1,2,3 Quantum Mechanics, Nuclear and Particle Physics:

The math prerequisite for non-ISP students in C39-1 is Math B15, B17, B21, and C16.

Political Science

Page 110

Under Political Science, second paragraph should read:

The department is especially strong in American politics and government; the politics of foreign countries, especially in Europe, Latin America, Asia, and Africa; international studies; law and politics; political economy; and political theory. Much of the department's work is associated closely with the activities of the Program of African Studies, the Center for International and Comparative Studies Program, and the Center for Urban Affairs and Policy Research, all of which are outstanding in their respective specialties.

Under Program of Study for Departmental Majors, first paragraph should read:

As soon as students have declared a major in political science, a department adviser can be assigned to consult regularly with them about the program of study. Students planning to major in political science should try to complete the B-level prerequisites and one C-level course by the end of the sophomore year.

Under Program of Study for Departmental Majors, Major Courses, should read:

Major courses: seven C-level courses in political science, one of which must be C10, C11, or C12 and another must be C95.

Under Honors in Political Science, replace paragraph with the following:

Majors with outstanding records both overall and within the department may apply for graduation with departmental honors. The primary route to earning the departmental recommendation for honors involves enrolling in C98 Honors Tutorial, a two-quarter course that requires writing a senior thesis. Students interested in exploring an alternate route to honors should meet with the director of undergraduate studies in the junior year. Either way, departmental honors requires outstanding work in connection with a research project.

Page 112

Under Comparative Politics

Change title of 449-B50-0 Comparative Political Systems to "Introduction to Comparative Politics"

Add:

449-C43-0 United States and Latin America

This course will examine the interactions between U.S. foreign policy and Latin American politics. The evolving importance of Latin America in U.S. geo-strategic objectives from the turn of the century through the Cold War, and during the emerging post-Cold War period, will be analyzed. The course will also look systematically at how the projection of U.S. power and influence shapes the domestic politics of selected countries.

449-C46-0 Politics of European Unification

The development and prospects of the European Union are examined by placing it in geopolitical and historical context.

Change title of 449-C50-0 Conflicts and Politics to "Communism and Post-Communism"

Change 449-C52-0 to read:

449-C52-0 Politics of East Asia

Examination of East Asia as a site for studying various concepts in comparative politics: war, revolution, imperialism, modernization, dependency, development, authoritarianism, party politics, democratization. East Asia viewed not as a region of discreetly encapsulated areas with idiosyncratic systems under essentially similar constraints, but as predicaments differing because of choices made to respond to the demands of modern capitalism.

Change 449-C54-0 to read:

449-C54-0 Southeast Asian Politics

Exploration of the political economy of Indonesia, Singapore, Burma, the Philippines, Thailand, Malaysia, Vietnam, as well as the smaller states of Laos, Cambodia, and Brunei. Focus on the post-WWII period; attention also paid to colonial influences and the Japanese invasion. Important themes include industrialization, human rights, and democracy.

Change 449-C55-0 to read:

440-C55-0 Chinese Politics

Fundamental conflicts in Chinese politics: party-mass relations, class, the urban-rural split, and debates over ideology, democracy, and development strategy.

Page 113

Delete 449-C56-0 Canadian Politics

Change title of 449-C57-0 Politics of Developing Areas to "Politics of Post-Colonial States"

Change title of 449-C59 African Political Systems to "Politics in Africa"

Change 449-C60-0 to read:

449-C60-0 Comparative Racial Politics

Examination of the interplay of racial, socio-economic and cultural tensions in multiracial polities

outside the U.S., in Germany, Trinidad and Britain. Methods of comparative analysis used to identify and distinguish patterns of racial politics between and within multi-racial nation-states. Theories and concepts of race and ethnicity, and their relationship to issues of state power, national identity and social policy.

Change 449-C61-0 to read:

449-C61-0 Democratic Transitions

Causes for emergence and breakdown of democracy in cases from Europe, Latin America, Africa, and Asia. Major focus on relationship between capitalist economic development, international forces, and timing of democratization across the globe. Role of culture and political elites in making democracy work also examined.

Delete 449-C63-0 Middle East Politics

Under Public Policy and Political Economy, add:

449-B04-0 Politics and Nature

Introduction to the study of environmental policy. Consideration of some fundamental issues and concepts concerning the maintenance of a livable planet, such as sustainable development, common property regimes, transformation of the environmental movement from a primary emphasis upon nature conservation to a complex set of foci concerning biodiversity, possible climate change, etc. Appraisals of the possibilities for effective political participation on issues of the environment.

449-C74-0 Politics and Markets

How democratic politics and markets interact. Examination of the politics of policy choices democratic governments make and the economic impact those choices have. The class will be cross-disciplinary, in that the approach will combine economic and political theory, and comparative, in that it will cover some of the most significant ways in which the U.S., western Europe and Japan differ.

449-C75-0 Comparative Politics of Business-Government Relations

In-depth analysis of relations between business and government in a variety of economic, social and political contexts. Focus on patterns of influence running in both directions. Major theories of business influence in politics, such as those on pluralism, corporatism, collective action, and instrumental and structural Marxism; also conditions under which government intervention improves business performance.

449-C76-0 Comparative Capitalism in the Advanced Industrialized Countries

Different patterns of industrialization produce differences in the political organization of capitalism, i.e., in the position and role of labor and in relations between business and the state. This course explores the historical roots of these differences and their implications for contemporary politics and policy.

Psychology

Page 114

Under Program of Study for Departmental Majors, Major courses, replace existing text by the following:

Major courses: B01, B05, and at least seven additional courses beyond the A level, subject to the following restrictions:

Not more than two courses from Cognitive Science B07, B10, and B11 may count toward the requirement

Select at least one course from the laboratory courses C01, C11, C16, C21, and C33 (the same course may count toward this category and one of the two categories following)

Select at least two courses from the personality/clinical and social courses B04, B15, C01, C03, C06, C16, C26, and C84

Select at least two courses from the cognitive and physiological courses B12, B28, C11, C12-1, C12-2, C21, C22-1, C22-2, C24, C27, C33, C34, C35, C60, C61, and C62

B39 will not count toward these requirements

At least three courses must be at the C level

Not more than one quarter of C99 may count toward the requirement

Five Related courses:

Three quarter-courses from the following: mathematics at the B level or higher, statistics at the C level or higher, and computer science at any level

Two quarter-courses from biological sciences, chemistry, and physics

Under Program for the Minor, Minor course requirements (7 units), replace existing text by the following:

Minor course requirements (7 units)

Psychology A10

Psychology B01 and B05

Four additional B- or C-level courses in psychology:

Select at least one of the following in the personality/clinical and social category: B04, B15, C03, C06, and C26; select at least one of the following in the cognitive and physiological category: B12, B28, C12-1, C22-1, C24, C27, C35, C61 and C62; at least two courses must be at the C level; not more than one quarter of C99 can count toward this requirement; B39 will not count toward the requirements for the minor.

Page 115

Add:

451-B39-0 Marketing Management

Basic principles and applications of marketing management; market segmentation, target marketing, brand positioning; survey of market research and consumer behavior; marketing of services, non-profits, the arts. Prerequisite: one introductory behavioral social science course (e.g., anthropology, psychology, sociology).

Page 116

Add:

451-C42-0 Biological Bases of Mental Illness

Examines consequences of brain abnormalities on cognitive and emotional behavior; discussion of neuropsychological, neurochemical, and neuroanatomical aspects of mental disorders; assessment of current theories, experimental paradigms, and methods. Prerequisite: A10, C03; B12 or C12-1 strongly recommended.

451-C61-0 Cognitive Neuroscience

Survey of the study of human cognition from the perspective of brain science. Prerequisite; A10 or B12.

451-C84-0 Interpersonal Relations

Psychological processes in social perception and interaction; focus on attraction and relationships, aggression and conflict. Prerequisite: B04.

Slavic Languages and Literatures

Page 120

Under Courses in Language and Linguistics, 467-C04-1,2,3 Russians: New and Old Values, delete the phrase "Yearlong course carrying one credit." [Note: Each quarter of C04 will now carry one credit.]

Under Courses with Reading and Discussion in English, add:

467-C14-0 Chekhov

Major short stories and plays considered in their broader literary and cultural context.

Statistics

Page 125

Under Program of Study for Departmental Majors, Major course requirements, replace the current description by the following:

Math C30-1 or IEMS C02; Stat C20-1,2; Stat C50; Stat C25; Stat C51; and two of the following courses: Math C30-2; IEMS C15; Stat C52; Stat C55; Stat C59; IEMS C05. Students may not apply both Math C30-2 and IEMS C15 to the major requirement.

Under Program for the Minor, Minor course requirements, replace "One of the following courses: Stat B02;; Stat B03; Stat C03" by:

One of the following courses: Stat B01; Stat B02; Stat B10; Stat C03.

Women's Studies Program

Page 127

Under Women's Studies Program, replace the first line "The Women's Studies Program coordinates an . . ." by:

The Women's Studies Program offers an . . .

Under Program of Study for Majors, replace Major courses (14 units) and the description following by:

Major courses (at least 11 units)

Core courses WMST B10, B30, B31

Six one-quarter courses, at least four at the C-level, focusing on women. Four of these six must be WMST courses. The others may be WMST courses or courses from other departments crosslisted under WMST.

WMST C97 Senior Seminar in Feminist Theory, followed by either:

a) WMST C98 and C99, or

b) one other C-level elective course

Students who choose option a) will generate an independent research project (a senior thesis) and will be eligible for departmental honors. Students who choose option b) will not write a thesis and will not be eligible for departmental honors.

Under Program for the Minor, replace Minor course requirements (9 units) and the description following by:

Minor course requirements (7 units)

Two WMST core courses chosen from B10, B30, B31

Five electives chosen in consultation with a women's studies adviser. At least three courses must be at the C-level; three of the five must be WMST courses; the remaining may be WMST courses or courses from other departments crosslisted under WMST. Students are encouraged (but not required) to take WMST C97, Senior Seminar in Feminist Theory, as one of the five.

Change description of 480-B31-0 to read:

New scholarship on women. Work, education, feminism, the women's movement in the arts and humanities.

Change course number and title of 480-C98-1,2 to read:

480-C97-0 Senior Seminar in Feminist Theory

Add:

480-C98-0 Senior Research Seminar

A continuation of C97. Students pick an advisor and begin preliminary research on a senior project, meeting on a reduced schedule. Open to senior majors with consent of the instructor.

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Supplement to: **1995-97 Northwestern Undergraduate Study**

School of Music

page 185

Academic Policies

Programs of Study

delete second and third paragraph, beginning "Undergraduates in these programs"

End of first paragraph, read:

"The School of Music is a founding member of the National Association of Schools of Music, which fully accredits all of its degree programs.

The curriculum allows flexibility for students while providing an education basic to all musicians. Undergraduates in all areas are accepted to the School of Music directly into a program of specialization that begins in the freshman year. The core studies, taken by all students, require the acquisition of minimum competencies and provide fundamental and essential experiences that complement the specialized studies in the declared major. Students are also required to complete studies in a number of allied subjects throughout the university, and are given significant opportunities to explore other interests with free electives."

page 187

Degree Requirements

omit first paragraph. Substitute the following:

"Candidates for the degree of bachelor of music in performance, composition, theory, music history, music technology, or an ad hoc area must complete 49.5 course units. A bachelor of music with specialization in music education may require as many as 52 units but also can be completed within four years.

All freshmen students in the School of Music must participate in band, choir or orchestra, as appropriate to their principal auditioned instrument. Freshmen and sophomores may not participate in more than two

ensembles. All students in the Department of Music Performance Studies must enroll in 510-C89 Convocation for at least four quarters. For specific requirements, see the Degree Requirements chart and the professional studies requirements of each program.

For the last 24 units, all students must be registered at Northwestern, and for the last 12 units students must be registered in the School of Music. Credit toward graduation generally is not granted for summer work taken during the last 24 units in other colleges or universities."

page 186

Bachelor of Music (48 course units)

read:

Bachelor of Music (49.5 units)

Music

Core Studies (12 units)

Music Theory (3 units)

Aural Skills (3 units)

Keyboard Skills (1.5 units)

Ensembles (1.5 units)

Music History (3 units)

Nonmusic (12 units)

General Education Distribution

Basic or intermediate English composition (1 unit)

General education electives, or used for either one or two years of the same foreign language (6 units)

One course from each of the following CAS distribution areas: I (natural science), III (social & behavioral sciences), IV (historical studies), V (values), VI (literature and fine arts) (5 units)

Specialization (19.5 units)

Professional Studies Requirement: see specific department and program. Specialization in one of the following areas: principal instrument, voice, music education, music history, music theory, composition, music technology, academic studies, or an ad hoc major.

Free Electives (6 units)

page 192

Private Lessons for Credit

read "a \$100 registration fee is billed to the student's tuition and fees account."

Courses Open to Undergraduates

501-B20-0 History of the Symphony

The history of music written for the symphony orchestra from the 17th century to the modern period. Consideration is given to instrumentation, the development of the orchestra as an institution, court and public ensembles, and the musical forms associated with the genre. Discussion focuses on representative works from the standard repertoire by such composers as Mozart, Beethoven, Brahms, Strauss, Mahler and Shostakovich. (VI. Literature and fine arts)

501-B30-0 Masterpieces of Opera

The history of opera from its origins in Italy at the end of the 16th century to the modern period. The course focuses on representative works by composers such as Monteverdi, Handel, Mozart, Rossini, Wagner, Verdi and Strauss. Discussion of dramatic and musical elements common to the genre. (VI. Literature and fine arts)

501-B41 Beginning Guitar

Group lessons in guitar techniques for beginners.

501-B52-0 Harmony

read "Prerequisite: A70, or consent of instructor. (II. Formal studies)"

page 193

Interdepartmental Courses for Majors

Courses Open to Undergraduates

510-C26-0 Advanced Aural Skills (.5)

Advanced literature-based aural skills using materials from Western art music of all style periods, world music, and popular musics. Emphasis given to audaging exercises, including error detection, rhythmic skills, aural analysis of harmony and form, and the refinement of other listening skills.

page 193-4

Music Composition Program

Professional Studies Requirement

read:

For specialization in composition, 19.5 course units are required

Composition and writing skills (12 units)

Analysis (3 units)

Departmental core (3 units)

One C-level course from three different departmental programs outside of composition: music education, music history and literature, music technology, or music theory.

Additional requirements of the program (1.5 units)

Participation in C70-0 Composition Colloquium (0 units)

page 194

Music Composition Program

Courses Open to Undergraduates

537-C70-0 Composition Colloquium (0)

Discussion of contemporary compositional techniques.

537-A11-1,2

read:

537-A11-1,2,3 Class Composition

Class instruction in techniques of original composition. Students in A11-3 must maintain concurrent registration in 537-C70 Composition Colloquium. Prerequisite: consent of instructor.

Music Education Program

Basic Studies Requirement

change 205-C03 Aesthetic Education

to: 525-B58 Aesthetic Education

page 195

delete:

525-C63-0 Teaching High School Nonperformance Courses

delete course and course description

205-C03-0 Problems in the Philosophy of Education: Aesthetic Education

Courses Open to Undergraduates

add:

525-B58-0 Problems in the Philosophy of Education: Aesthetic Education

Philosophical issues in music education relating to the teaching and learning of music in the schools. Development of a philosophy of music education that may serve as a basis for professional responsibilities.

change:

change 525-C63-0 Teaching High School Nonperformance Courses

to: **525-C33-0** . . .

page 197

Music Theory Program

Professional Studies Requirement

add:

Participation in C70-0 Theory Colloquium (0)

page 198

Courses Open to Undergraduates

535-C53-0 Schenkerian Analysis

change to:

535-C53-1,2 Schenkerian Analysis

Heinrich Schenker's theories of musical structure and analysis of musical works. Techniques of Schenkerian analysis applied to composition by Bach, Beethoven, Chopin, Mozart, Schubert, and others. Second quarter: Advanced study in Schenkerian analysis focusing both on techniques of graphic analysis and on large-scale compositions. Extensions of Schenker's theories by post-Schenkerian theorists. Prerequisite for C53-1: B20 or equivalent; Prerequisite for C53-2: C53-1 or equivalent.

add:

535-C56-1,2 Atonal Analysis

Techniques for the analysis of atonal and non-functional tonal music, including set-theoretic, serial, and parametric approaches. Emphasis on the music of Schoenberg, Webern, Berg, Stravinsky, and Debussy. Selected readings in related analytic literature. Second quarter: Advanced atonal analysis. Analysis of a coherent post-tonal repertoire, and readings in related analytic literature. Prerequisite of C56-1: B20 or equivalent; Prerequisite of C56-2: C56-1 or equivalent.

535-C70-0 Theory Colloquium (0)

Discussion of current research in music theory.

page 199

Piano Program

Professional Studies Requirement

change:

For specialization in piano performance, 19.5 course units are required:

C13 Piano Repertoire (3 units)

C15 Piano Pedagogy (3 units)

A-C 61 Piano Performance (12 units)

Additional requirements of the program (1.5 units)

In addition, enrollment in 510-C89 Convocation is required for four quarters.

page 200

add:

under "Voice and Opera Program Professional Studies Requirement"

following "Choral Ensemble and Opera Performance (3 units)",

read:

In addition, enrollment in 510-C89 Convocation is required for four quarters.

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Supplement to: **1995-97 Northwestern Undergraduate Study**

School of Speech

- [Communication Sciences and Disorders](#)
 - [Communication Studies](#)
 - [General Requirements for a Major in Communication Studies](#)
 - [Radio/Television/Film](#)
-

Communication Sciences and Disorders

page 206

Right column under Audiology and Hearing Sciences, omit words "with the opportunity for supervised clinical experience for advanced undergraduate students."

In the second paragraph, the word "program" in the first line should be omitted. It should read "The master's degree in Audiology and Hearing Sciences."

page 207

Left column under Speech and Language Pathology, 6th line, omit the words "language development and." The sentence should then read "The first two years of the undergraduate curriculum emphasize the psychological, linguistic,"

Right column, 3rd line, omit the word "a" so that it reads "affecting communication and with more detailed study"

Right column, 6th line, currently reads "aphasia, cerebral palsy, cleft palate," Insert "swallowing disorders,"

Right column under Requirements for a Major in Communication Sciences and Disorders, the 6th bullet on the writing requirement should read, "Writing proficiency requirement: All students must meet the writing proficiency requirement." Omit the words "as described under Academic Policies in the CAS section of this catalog."

page 209

Right column, immediately above Speech and Language Pathology, course C81 should be added to read "623-C81 Social Development in Normal and Learning Disabled Children (1) — Current Theories of and Empirical Research on Social-Emotional Development from Infancy through Adolescence, Identification and Treatment of Social Deficits in Learning-Disabled Children.

Communication Studies

The Department of Communication Studies offers liberal arts-oriented coursework focused on the most fundamental and pervasive of all human activities. The study of human communication ranges from interpersonal processes such as persuasion and relationship formation, to organizational processes such as group leadership and dispute resolution, to the strategies and styles of public deliberation and debate, and on to the political and cultural processes involving mass media and telecommunications systems. At the same time, the study of human communication encompasses the scholarly traditions of both the humanities and social sciences. The intellectual foundations for this study range from classical rhetoric to cognitive science, from economics of computer-mediated communication networks to the ethics of public argument.

The Department of Communication Studies has organized the wealth of theory and research on human communication as well as the real-world applications of that theory and research to six course concentrations. These are interrelated sets of courses that can help students to coordinate their choice of classes with their intellectual interests, their post-graduate educational plans and their career goals. Students who major in Communication Studies are encouraged, though not required, to organize their course work within one or two of these concentrations as described below.

Course Concentrations

Organizational Communication

The success of all organizations whether small neighborhood groups or giant social, economic, legal and technical aspects of mass communication and telecommunications. This concentration will be of interest to students who seek careers in such communication fields as advertising and public relations, management of entertainment and information industries, and public policymaking. To complete this concentration, students must select a minimum of six courses from the following: B01, B29, B75, B87, C30, C50, C70, C76, C77, C85, and C93.

Rhetoric, Media and Public Culture

Citizens of the twenty-first century must understand the communication opportunities, obligations and risks that emerge in an era of cultural diversification and conflict. This course concentration examines the relationship between communication and culture from a rhetorical and critical perspective that is, from a point of view emphasizing the use of language and image to characterize social reality, to create forums for deliberation and debate, and to confront controversial issues and cultural differences. This concentration includes courses that engage the issues raised by differences of race, class, gender, nationality and political conviction. It also includes courses that examine such cultural processes as the legitimization of social authority, the construction of personal as well as national identity and the articulation of national purpose and international obligation. The role of the mass media in these issues and processes is of particular concern. This course concentration is intended for students who are interested in positions of leadership in civic life such as cultural, political and educational institutions, community-based organizations and social reform movements. To complete this concentration, students must complete B10 and one other B-level course from the following: B25, B71, and B75. They must also select a minimum of four C-level courses from the following: C10, C11, C15, C20, C25, C27, C28, C29, C30, C70, C71, C75, C76, C77, C78, and C92.

multinational corporations depends on effective communication. Organizations must have members who are skilled in the basic communication activities of persuasion, group leadership and decision making, bargaining and negotiation and team problem-solving. And in the contemporary world, organizations also demand the knowledge necessary to analyze and act upon information gathered from surveys and other research methods, to harness the resources of communication technology and to thrive in an environment of diverse individuals. This concentration includes courses that develop basic communication skills as well as courses that examine communication processes in such contexts as task-oriented groups and professional-client relationships. It also includes courses that focus on the organizational challenges associated with technology, information management, cultural diversity, and image-building. This concentration will be of interest to students who wish to work and who will seek to lead in either business or not-for-profit organizations. To complete this concentration, students must take B01 and B60 and choose a minimum of four courses from the following: B05, B29, B50, B75, C29, C41, C50, C61, C62, C63, C64, C65, C71, C91, C92, and C93.

Communication Industries and Technologies

Mass communication and telecommunications are reshaping the culture, commerce and politics of the United States and the world. Media firms are merging into ever larger organizations that produce film, television, music, books, magazines, newspapers and software for audiences world-wide. At the same time, technology is breaking down the old distinctions among computers, telephones, video and print to create new networks that integrate video, voice and data. These changes present new, sometimes unanticipated, challenges to managers in business as well as leaders in government, education, the arts and the professions. This course concentration is intended for students who wish to prepare for these challenges by developing an understanding of the ***Relational Communication***

Our lives are spent in relationships with others. Most people are born into a family, form friendships, join work groups and begin romantic attachments that sometimes turn into new family units. Interpersonal communication is the means by which we develop, maintain, and terminate these relationships. The relational communication concentration, which focuses on these processes, has four components. First, there are courses that examine the psychological variables that affect how people create and interpret the communication behaviors that occur during social interaction. Second, there are courses that examine the contexts in which relational communication occurs such as the family and the work group. The third group of courses focuses on strategies and processes of interpersonal influence. And the fourth group of courses focuses on the impact of gender, culture and other factors on the processes of relational communication. This concentration is intended for students who are interested in the psychological foundations of human communication as well as students interested in the helping professions (e.g., therapists, counselors). To complete this concentration, students must complete two core courses, B01 and B41, and select a minimum of four others from the following: B05, B40, B50, B60, C40, C41, C44, C43, C45, C50, and C82.

Media and Politics

Communication is essential to effective leadership in politics, as well as to citizen participation in politics. Leaders must employ the arts and sciences of communication to negotiate policy, move public opinion, maintain relations with other nations and, of course, win votes. Citizens must understand these arts and sciences if they are to maintain self-government. This course concentration focuses on the role of communication in the political processes of modern democracies, and especially on the ways that statesmen, officials, candidates and citizens interact with the mass media in the realm of public affairs. This concentration is intended for students who are interested in political organizing and consulting, opinion polling, policy analysis, and research work in public interest groups and other not-for-profit organizations. To complete this concentration, students must complete A-20 and a minimum of three courses from each of two groups. Courses in the Political Leadership group focus on the rhetoric and strategies of political persuasion. They are: C15, C21, C25, C28, C80 and C91. Courses in the Citizen Participation group concern Americans' beliefs and the ways they respond to political information. They are: B01, B05, B71, C70, C71, C72, C80 and C93.

Argumentation and Advocacy

Lawyers, policymakers indeed, all citizens must be able to put forward and defend their views when matters of common concern are debated. This course concentration is based on the conviction that the skills of advocacy can best be cultivated in the liberal arts tradition by uniting intensive practice in the arts of argumentation with theory-based understanding of advocacy and deliberation. In this concentration, courses emphasizing practice require students to think critically about their positions, plan their communicative strategies effectively and argue their cases forcefully. Courses emphasizing understanding enlarge students' views of the traditions and institutions especially the law that shape the processes of advocacy and deliberation on vital issues. Thus prepared, students can take their places as

articulate citizens in the various communities to which they belong. Students with a special interest in the law will find that this concentration equips them with perspectives and skills vital to their career goals. To complete this concentration, students must select three practice-oriented courses from the following: B14, B20, B21, B50, and C17. They must also select three theory-oriented courses from the following: B05, B10, C11, C21, C25, C30-1, C63, C64, C72, C91, and C93.

General Requirements for a Major in Communication Studies

Two of the following courses: 601-A01, A02, A03, A04.

Additional 12 courses in speech, at least 9 of which must be in the department. At least 5 courses within the department must be at the C level. Not more than one unit of C93 Field Study and not more than two units of C99 Independent Study may be applied toward the total of 12 courses in speech.

A field of concentration in an area other than speech (normally one of the disciplines of the College of Arts and Sciences), consisting of at least 6 courses with half or more of this study at the C or D level. Courses taken to satisfy the distribution requirement may be applied to the field of concentration if they fall within the discipline in which the student chooses to concentrate.

Four-Year BS/MA Program

The department offers a four-year BS/MA program for outstanding undergraduate majors. Interested students should apply to the department by the end of their sophomore year; departmental approval is required before application to the Graduate School, which should be made during the junior year. By the end of the junior year, students should have completed all requirements for the undergraduate major, the field of concentration and the distribution requirements, with a total of at least 38 units of credit. During the fourth year, students enroll in 9 graduate-level courses to complete work on the master's degree and 3 undergraduate electives to complete work on the bachelor's degree.

Departmental Honors Program

The Undergraduate Honors Program in Communication Studies is an opportunity for highly motivated students to conduct original scholarly research. A small number of students in the department (determined by overall grade point average) are invited to apply for the Program at the end of winter quarter of their junior year. Through the senior year, students work closely with faculty to produce an original research project in an interest area determined by the student. Seniors who complete the Program graduate with departmental honors.

Courses primarily for Freshmen and Sophomores

601-A01 Interpersonal Communication

Laboratory experience in human interaction. Analysis of communication within groups.

601-A02 Public Speaking

Theory, composition, delivery and criticism of public speeches.

601-A04 Argumentation and Debate

Theories of argumentation and debate, with many opportunities for practice. Recommended for students planning to participate in intercollegiate debate or for the development of debate skills.

601-A20 Communication and American Democracy

The role of communication especially the mass media in a democratic society: the processes of political newsgathering; the rhetoric and effects of campaign news, debates, and advertising; the impact of the media on the formation of public policy.

B01 Research Methods in Communication Studies

Logic and underlying assumptions of behavioral research used in both academic and real world settings. Design of Surveys, experiments, field studies, content analysis, and other techniques used in communication research.

B05 Theories of Persuasion

Principal variables and theories explaining the response of individuals and groups to persuasive communication.

B10 The Arts of Controversy: An Introduction to Rhetorical Thinking

Introduces students to the varieties of ethical, political, and aesthetic arguments concerning the ways people influence and are influenced by others. Special attention is paid to how controversy engages us in our efforts to create consensus, compete socially, contest decisions, and engage in advocacy and argument. The aim of the course is to widen students' capacities to think in a variety of styles or situations involving uncertainty, persuasion and choices involving others.

B14 Legal Argumentation

Argumentation practices in the legal forum: nature and procedures of legal controversy; modes of reasoning about fact and law; the history and ethics of legal advocacy.

B15 Principles of Rhetorical Criticism

Analysis and evaluation of public discourse with special attention to the way such discourses shapes and reflects political, social, and cultural values.

B20 Theories of Argumentation

Fundamental principles and practice of critical reasoning and informal logic. Preparation for students interested in legal, philosophical, or political realms of communication and advocacy.

B21 Speech Writing

Theory and practice in the principles of composition and in the preparation and delivery of manuscript speeches.

B25 Forms of Public Address

Selected genres of public address: the eulogy, the censure, the inaugural, the apology, and the dedication.

B29 Communication Technology, Community, and Personal Identity

Philosophical, critical, and scientific treatments of how the intensification of technology is cultural, professional, and recreational domains is affecting our social relations and personal identities through communication.

B35 Philosophy of Language and Communication

Relationship between language and human communication behavior, how language structures individual world views; the process of meaning formation; therapeutic communication; the experience of creativity.

B40 Theories of Interpersonal Communication

Theories and research dealing with communication in relatively unstructured situations.

B41 Theories of Relational Communication

Theories and research dealing with relational development, maintenance and dissolution. Focus on key relational contexts.

B50 Small Group Processes

Theories and research relating to communication in small groups; applications.

B60 Theories of Organizational Communication

Theories and research dealing with communication in formal organizations and institutions.

B70 Theories of Mass Communication

Major theoretical perspectives on the mass media and their audiences.

B71 Race, Gender and the Mass Media

Exploration of the ways race and gender are constructed by the American mass media; investigates how different social groups use the media for their own purposes. Among the topics to be covered in the course: coverage of minorities in the news, images of women and minorities in advertising, social effects of pornography, race and gender on MTV. Guest speakers will discuss the ways race and gender are treated in television commercials. *2-hour discussion section required.*

B75 Persuasive Images: Rhetoric of Contemporary Culture

Impact of image-making on contemporary society. Among the subjects studied are Hollywood films, sitcoms, popular music, shopping malls and super markets, advertising and marketing.

B87 Communication Technology and Society

New communication technologies are reshaping society and the economy. This course provides a basic introduction to communication technologies, both new and old, and examines the societal and economic issues they raise from a variety of disciplinary perspectives.

B90 Forensics

Independent research and analysis in conjunction with participation in intercollegiate forensics. Credit may not be earned for B90 more than once.

Courses Primarily for Juniors, Seniors and Graduate Students

C10 Greek Rhetorical Theory

Survey of the history of Greek rhetoric from its origins in the fifth century B.C. through the Byzantine period. The main concentration is the classical period, with special attention to Gorgias, Protagoras,

Isocrates, Plato, and Aristotle.

C11 Latin Rhetorical Theory

Survey of the history of Latin rhetoric from Cicero through Francis Bacon. Cicero's rhetorical works serve as the foundation, but attention is also paid to Quintilian and Augustine's major work on rhetoric.

C12 Modern Rhetorical Theory

Survey of the history and fate of late-Enlightenment rhetorical theory, ranging from the work of Campbell and Whately to twentieth century rhetoricians, such as Richards, Weaver, Burke, and the rebirth of rhetorical studies.

C15 Rhetoric of Social Movements

Study of traditional theories of opposition derived from sociological and rhetorical analyses of mass movements. Engages New Social Movements as groups contest a variety of issues such as abortion, animal rights, feminism, and other local and national issues.

C20 Advanced Argumentation

Diverse methods and perspectives brought to the study of expressing disagreement and seeking consensus in an intellectual, professional, aesthetic, social, and public fora. The course addresses theoretical and practical perspectives on relationships among communication, reasoning, and arguing.

C21 Public Argumentation

Engagement in contemporary controversies over domestic and foreign policy. Focuses on the practices of political debate and traditional analyses of liberal and conservative positions. Examines aspects of public culture as issues of identity, representation, and channels of communication are contested and influence how public argument is constituted.

C25 Rhetorical History of the United States

Communication phenomena of rhetorical significance as products of cultural change and as influences in major intellectual and social movements. C251: Colonial period to the outbreak of the Civil War. C252: Civil War to the coming of the New Deal. C253: New Deal to the present.

C27 Contemporary Rhetorical Practice

Contemporary history from a rhetorical perspective. Analysis of public communications and the

rhetorical study of nonrhetorical events; emphasizing social movements and political controversy in the United States since 1960.

C28 The Rhetoric of War

The genre of war rhetoric; American experience in the 20th century using speeches, diaries, newspaper reports, government documents, films, and poetry.

C29 Rhetoric, Science and Technology

This course focuses on contemporary debates concerning the standing and production of scientific argument. It investigates current controversies over the social constitution and consequences of science and technology.

C30,1,2 Contemporary Problems in Freedom of Speech

Personal freedom and public communication under the U.S. Constitution. C301: Principles, forms of reasoning and court decisions governing conflicts between freedom of speech and public order, personal security, morality, property rights, and racial and gender equality; in traditional, mass and new electronic media. C302: Analysis of selected issues introduced in C301. *Prerequisite: C30-1.*

C40 Communication and Socialization

Communication processes involved in the socialization of children. Communication with major socializing agencies.

Prerequisites: B01 and B70.

C41 Communication and Aging

The relationship between adult developmental processes and changes in communication behavior.

Prerequisites: B01.

C43 Social Cognition and Communication

The relationship between social cognition and communication behavior. The impact of attribution and schemata on interpersonal, public and media effects. *Prerequisites: B01.*

C44 Interpersonal Conflict

Conflict behavior within interpersonal relationships, especially friendships and families. The causes of

conflict and methods of conflict resolution. *Prerequisites: B01, and B05.*

C45 Theories of Nonverbal Communication

Contributions of various disciplines to the development of theories of nonverbal communication systems. *Prerequisites: B01.*

C50 Computer-Mediated Communication and Information Systems

Examination and analysis of the tools and issues in computer-mediated communication and networked information systems; effects of new communication technologies at the interpersonal, group, organizational and societal levels.

C60 Current Perspectives in Organizational Communication Research

Selected micro and macrolevel theories of communication behavior in organizational settings. *Prerequisites: B01 and B60.*

C61 Intergroup Communication and Urban Change

The small group as an agent of social change in urban society; the internal and external communication processes in such change.

Prerequisites: any two of B50, B60 and B70.

C62 Professional-Client Communication

Communication between professionals and clients in medicine, law, education, psychotherapy, and social services. Alternatives to the professional-client model of problem solving. *Prerequisites: B01 and B60.*

C63 Bargaining and Negotiation

Communication within bargaining and negotiation in organizational settings. Relevant cognitive and motivational theories emphasizing bargaining and negotiation strategies. *Prerequisites: B01, B05, and B60.*

C64 Collective Decision Making and Communication in Organizations

Research on how organizations make, communicate, and implement decisions. Course covers group decision making, leadership in organizations, organizational design, and assessing decision

effectiveness. *Prerequisites: B01 and B60.*

C65 Solving Problems in applied Organizational Communication `

Advanced concepts and techniques for defining and analyzing organizational problems. A unique, multiple-perspective model of organizational communication will be developed through lectures and students' homework assignments. This course is designed to prepare students to recognize and work with problems they may encounter when taking on responsibilities in business organizations. *Prerequisites: B01 and B60.*

C70 Current Perspectives in Mass Communication Research

Theories currently applied to the study of mass communication such as the knowledgegap hypothesis, and agenda setting. *Prerequisites: B01 and B70.*

C71 Public Opinion

Explores the nature of public opinion, and the history of techniques for expressing and assessing public opinion. Also surveys theories about the relationships among media, public opinion, and policy. *Prerequisites: B01 and B70.*

C72 Mass Media and Campaign Strategies

Planning, implementing, and evaluating mass media campaigns by applying mass communication theories. *Prerequisites: B05 and B70.*

C75 Rhetoric and the Arts

The impact of art forms such as theatre, music, dance, film, and television on the public. Critiquing of guest artists by students. *Prerequisite: B75.*

C76 The Rhetoric of Popular Criticism

The rhetorical strategies used by popular critics in all forms of public communication. *Prerequisites: B75.*

C77 Marketing Popular Culture

Producing and marketing of popular culture. Topics vary: film, comedy, popular music, news, docudrama, and the novel.

Prerequisites: B75.

C78 Rhetoric and Aesthetic Theory

Interpretation and critique of the impact of major movements in aesthetic theory on the theory and practice of rhetorical communication. *Prerequisite sites: B10, B15 or an equivalent course in interpretation or criticism.*

C80 Political Communication

The nature and functions of communication within established political institutions; decisionmaking strategies, deliberative discourse, and electoral campaigns; field study of advocates and interest groups. *Prerequisite: B05, B10 or B70.*

C81 Classroom Communication Behavior

The classroom as a communication system; verbal and nonverbal patterns of interaction. Systematic analysis of teacher-student behavior according to interpersonal and group processes.

C82 Family Communication Behavior

The family as a communication system. Application of communication perspective to family interaction. Family interaction research. Methods of improving family communication.

C85 Mass Media Economics

This course develops an economic framework for analyzing factors that influence the economic organization of media industries and the behavior of media firms. Applications of the framework to policy issues such as network regulations and limits to First Amendment freedoms are explored.

Prerequisites: B01 and B70.

C89 Practicum in Mass Communication Research

Research design, conduct, and analysis of data gathered in mass communication contexts. Research on public opinion and mass communication processes. *Prerequisites: B01 and B70.*

C91 Ethical Issues in Communication

Ethical problems in public, group, and interpersonal communication; criteria for their resolution.

C92 Intercultural Communication

Develops an understanding of the impact of culture on one's perception, beliefs, meanings, and communication, as well as the effect of communication on culture.

C95 Topics in Communication Studies

Reading, research, and discussion in areas of significance. Topics vary.

C98 Undergraduate Seminar

Student- or faculty-initiated seminars to consider special topics. Credit for C98 may be earned more than once. No more than two units of such credit may be applied toward fulfillment of the major requirements.

C99 Independent Study

Prerequisite: permission by petition.

Radio/Television/Film

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Delete 615-C50-0 Telecommunications Policy . Course is now graduate-level.

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Supplement to: **1995-97 Northwestern Undergraduate Study**

McCormick School of Engineering and Applied Science

- [General Engineering Courses](#)
 - [Biomedical Engineering](#)
 - [Chemical Engineering](#)
 - [Civil Engineering](#)
 - [Electrical Engineering And Computer Science](#)
 - [Electrical And Computer Engineering](#)
 - [Industrial Engineering & Management Sciences](#)
 - [Mechanical Engineering](#)
-

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add to the listing of degrees:

Engineering Science

Page 141

replace the section on Personal Computers with the following:

Northwestern's campus is now fully networked so that students can access a wide variety of local and remote information sources from dormitory rooms and public laboratories on campus. These include the university library catalog and other library resources, a campus-wide information service called NUInfo, an electronic mail system, and the world-wide internet web. Taking note of the pervasive spread of computing, the McCormick faculty has adopted a policy statement making each undergraduate engineering student responsible for his/her own basic computing hardware and software for such tasks as word-processing, spreadsheet calculations, graphics, and connecting to the university's computer network. McCormick will continue to maintain a number of public and departmental computing laboratories, but it is anticipated that these will be used primarily for higher level or more specialized applications which students will not be expected to provide themselves.

Page 145-146

Organizations for Engineering Students

Society of Automotive Professional Engineers:
change to Society of Automotive Engineers

Page 146-147

McCormick School Curriculum Requirements:

Basic Sciences (5 courses) remove astronomy.

Basic Engineering

Systems Engineering and Analysis courses:

IE C13 Deterministic Models and Optimization

IE C15 Stochastic Models and Simulation

IE C19 may not be taken with either IE C13 or IE C15.

Electrical Science

ECE B41 Circuits I

ECE B42 Circuits II

ECE B70 Applications of Electronic Devices

ECE C01 Fundamentals of Electromagnetics

Systems Engineering and Analysis

add:

IE C13 Deterministic Models and Optimization

IE C15 Stochastic Models and Simulation

Remove Computer Science list and create a **Computer Science and Computer Engineering** list, as

follows:

Computer Engineering

CS B11 Fundamentals of Computer Programming
CS B30 Introduction to Software Programming
CS C17 Data Management and Information
ECE B01 Fundamentals of Computer Organization
ECE B05 Fundamentals of Computer System Software
ECE B30 Introduction to Software Engineering
ECE C16 Mini/Microcomputers and RealTime Applications
ECE C28 Numerical Methods for Engineers

Probability, Statistics, and Quality Control

replace:

EECS C02 Probabilistic Systems and Random Signals

with:

ECE C02 Probabilistic Systems and Random Signals

Computer Programming (1 course)

Replace entry with:

One of the following:

ECE A01 Introduction to Scientific Programming and FORTRAN

CS A10 Introduction to Computer Programming

CS A11 Fundamentals of Computer Programming

Passing the computer exemption examination before matriculation provides one unit of credit.

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Department Curricula

Applied Mathematics Curriculum

Major Program,
Additional Courses,
Numerical analysis

add:

ESc C46

Basic Sciences - 5 courses

Phys A35-1,2,3 General Physics

Chem A01, A02 General Chemistry

Drop Biol-1,2 Biology

Biomedical Engineering Curriculum

Basic Sciences - 5 courses:

Add after A72: "and one additional basic science course"

Basic Engineering - 6 courses:

Electrical Science: change course designation from EECS to ECE B41 or B70

Computer Science: change course designation from EECS to ECE B01 or C16 or C28

Probability, Statistics, and Quality Control: change course designation from EECS to ECE C02

Computer Programming - 1 course:

Change course designation from EECS to ECE A01 and add CS A10 or CS A11

Major Program 16 courses at the B level or

higher

Delete "at the B level or higher"

Areas of Specialization 9 courses

Change Biomedical Instrumentation to Electronic Instrumentation

Change Biomechanics to Mechanics

Change Biotransport Processes to Transport Processes

Change Biomedical Signals to Biomedical Signals and Imaging

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Chemical Engineering Curriculum

Major Program:

Change Required courses from 12 to 11 courses.

ChE C51 Change name to Process Economics, Design, and Evaluation.

ChE C52 Change name to Chemical Engineering Design Projects.

Delete the last 5 lines in the Required courses section ("Substitute ChE C71..." thru "...materials science course").

Change Areas of specialization from 4 to 3 courses each time it appears - in the heading and in the first line of text.

Insert the following above the Areas of specialization section:

Advanced Science Electives 2 courses

One approved B- or C-level chemistry, physics, biological sciences, or materials science course.

One B- or C-level chemistry course or equivalent (e.g., ChE C61).

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Computer Engineering Curriculum:

Basic Engineering

Change to:

Electrical Science: ECE B41

Computer Engineering: ECE B01, B05

Computer Programming

Change to:

CS A10 or A11

Major Program - 16 courses

Required Courses - 10 courses

ECE B30 Introduction to Software Engineering *or* CS B11 Fundamentals of Computer Programming II

ECE B42 Circuits II

ECE B43 Signals and Systems

ECE B50 Physical Electronics

ECE C02 Probabilistic Systems and Random Signals

ECE C06 Electronic Circuits

ECE C53 Digital Electronic Circuits and Systems

ECE C55 Computer Architecture I

CS C10 Mathematical Foundations of Computer Science

CS C11 Data Structures and Data Management

Design Requirement - 1 course

ECE C41 Design of RealTime Systems
ECE C46 Microprocessor System Design
ECE C56 Computer Architecture II
ECE C91 VLSI Systems Design
ECE C96 Engineering Design and Entrepreneurship
ECE C98 Electrical and Computer Engineering Design
ECE C99 Projects, when C99 is a design project
CS C43-2 Operating Systems II
CS C94-2 Software Project Management and Development II

Technical Electives - 5 courses

ECE C32, C47, C57, C60, C74, C97
CS C36, C39, C43-1, C51, C94-1

Any course listed for the design requirement and not used to satisfy the design requirement

Computer Science Curriculum

Total Requirements: 48 courses

Mathematics: 6 courses

Math B14-1,2,3 Calculus
Math B17 Sequences and Series, Linear Algebra
Two courses from Computer Science Mathematics List

Basic Sciences - 5 courses, including

Physics A35 1,2

Basic Engineering - 6courses, including CS B11 and a probability/statistics course.

Computer Programming - CS A1-1

Social Sciences/Humanities - 7 courses

Communications - 2 courses

Unrestricted Electives - 5 courses

Major Program - 16 courses

Required Courses - 8 courses

CS C11 Data Structures

Seven courses drawn from CS B30, CS C10-C99

Technical Electives - 8 courses

Four courses from the Advanced Computer Science list; Two courses from any of the three lists below;

Two courses are unrestricted, subject to the approval of the student's department advisor.

Project Work

The courses above must be chosen to include two quarters of project work, resulting in the construction and demonstration of a solution that addresses some organization's problem. Projects must be approved by a faculty advisor beforehand.

Notes:

D-level courses are primarily for graduate students, but may be open to advanced undergraduate students with permission.

CS A10 may be used as a technical elective if taken before CS A11.

Technical electives may not satisfy other requirements.

Typically project work will occur in independent study projects (C99's) or in project-oriented courses (i. e., C94).

Advanced Computer Science List

CS C10-C99

Computer Science Mathematics List

CS C10, CS C52, Math B15, B21, C08, C10, C35, C37-1,2,3

Computer Science External Technical Elective List

Math C13; IE C13, C15, C19, C28, C33, C35; Statistics C20-1,2; ESAM C11-1,2,3; ECE C13, C28, C55, C56, C57

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Electrical Engineering Curriculum:

Basic Engineering

Delete: Fluids and Solids: CE B19 *or* ME B41 *or* CE B16

Add: Probability, Statistics, and Quality Control: ECE C02

Major Program

Required courses

Number changes from 10 to 9

Remove ECE C02

Technical Electives

Number increases from 5 to 6

Last Sentence of Technical Electives changes to:

"At least 4 of the 6 technical electives must be in ECE."

Environmental Engineering Curriculum

change title:

CE C66 Ecosystems and Ecotoxicology

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add:

Engineering Science Curriculum

Total Requirement - 48 courses

Mathematics - 6 courses

Math B14-1,2,3; B15 Calculus

Math B17 Sequences and Series, Linear Algebra

Math B21 Elementary Differential Equations

Basic Sciences - 5 courses

Phys A35-1,2,3 General Physics;

any two from Chem A01, A02 General Chemistry,

Biol B10-1,2 Biology

Basic Engineering - 6 courses

Mechanics: CE B12

Thermodynamics: ChE B11 or ME B20

Fluids and Solids: CE B16 and ME B41 or BME B70

Materials Science: MSc B01

Electrical Sciences: ECS C01

Computer Programming - 1 course

Social Sciences/Humanities - 7 courses

Communications - 2 courses

Unrestricted Electives - 5 courses

Major Program - 16 courses

Required Courses - 7 courses

ESAM C11-1,2 Methods of Applied Math

ESAM C21-1,2 Models in Applied Math

ESAM C22 Applied Dynamical Systems

IE C01, 02 or Math C30-1,2 Probability and Statistics

Areas of specialization - 9 courses

These nine courses are chosen from C and D-level offerings in engineering, science or mathematics.

Some part of the selection should constitute a focus in an area of specialization. Approval by the departmental advisor, Professor W. E. Olmstead, is required.

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Industrial Engineering Curriculum

Basic Sciences

change A35-1, A35-2 plus three courses that satisfy the McCormick School requirement to Physics A35-1, 2; plus three additional courses satisfying the McCormick School requirement and resulting in three quarters of chemistry or three quarters of physics.

Manufacturing Engineering Curriculum

Basic Engineering

change IE C19 to IE C19 or IE C13 and IE C15 (student gets credit for only one course).

Major Program

Core

change ME C40-1,2 to ME C40-1 required; plus at least one from ME C40-2 and ME C40-3.

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Materials Science and Engineering Curriculum,

Major Program

Required Courses:

Change Required Courses from 10 to 11 courses

Add MSc C91 Process Design

Technical Electives:

Change Technical Electives from 6 to 5 courses

In the paragraph that follows, change "2 of the 6" to "2 of the 5" in lines five and six.

Mechanical Engineering Curriculum

Options-6 courses

change to Options-6 C-level courses or permission of department

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General Engineering Courses

add the following courses:

703-A05 Freshman Design and communications. Integrated introduction to the engineering design process and technical communications. User-oriented design; team structure and teamwork; project planning, conceptual and detailed design; written, oral graphical and interpersonal communication; introduction to CAD; discussion of societal and business issues. This two-quarter sequence will carry .5 units of credit each quarter. Registration by invitation only.

703-B05-1 Computational Methods and Linear Algebra Introduction to linear algebra from both a computational and mathematical viewpoint, computational methods using a higher level software package such as Matlab[®], introduction to programming and FORTRAN 77. Registration by invitation only.

703-B05-2 Linear Algebra and Mechanics Use of vector methods and linear algebra in engineering analysis. Emphasis is on the integration of mathematical and engineering science content through the teaching of statics and dynamics of particles and rigid bodies and matrix and finite analysis of trusses and networks. Elements of engineering design are also introduced throughout the course and in a final open-ended project on the design of a truss network system. Registration by invitation only.

703-B05-3 Dynamic System Modeling Dynamic behavior of the elements, modeling of systems composed of those elements, in mechanical (both translational and rotational), electrical, thermal hydraulic, and chemical systems. Notations which describe the interaction of elements to compose dynamic systems are used, e.e. free-body diagrams, circuit diagrams. Equations of motion can then be found. The use of energy and momentum, which are constraints of the motion, will be covered. One unit applies matrix methods of multi-dimensional vibration problems. Registration by invitation only.

703-B05-4 Differential Equations Solution methods for ordinary differential equations will be covered including exact, numerical, and qualitative methods. Applications and modeling principles will be used to help motivate the solution techniques. Registration by invitation only.

Biomedical Engineering

Undergraduate Program

Change first sentence in second paragraph to read as follows: "The biomedical engineering program provides biomedical training that is quantitative, emphasizes problem solving, and treats phenomena from the molecular to the systems level."

Areas of Specialization

Change Biomedical Instrumentation to Electronic Instrumentation

Edit the description so that it reads as follows: "Electronic instruments are used widely in the diagnosis and treatment of disease and in the study of normal physiological function. Students in this area learn the fundamentals of electronic and computer (hardware and software) instrumentation."

Biomechanics

change to *Mechanics*

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Biotransport Processes

change to *Transport Processes*

Biomedical Signals

change to *Biomedical Signals and Imaging*

Courses Primarily for Undergraduates

765-C08 Biomedical Engineering Laboratory Prerequisites: Change EECS to ECE B41 or B70

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Change course title and description for 765-C23 to the following:

765-C23 Visual Science Organization of the mammalian visual system, optics of the human eye, visual image representation, signals in the visual system, spatial vision, sampling and interpolation, visual adaptation, motion processing, color vision, feature extraction, object perception, image interpretation. Prerequisite: Phys A35-3.

Delete:

765-C30 Optics in Biomedical Sciences

765-C72 Cardiovascular Mechanics

Change course title to:

765-C72 Hemodynamics

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765-C83 Cardiovascular Instrumentation Prerequisite: Change EECS to ECE B41 or B70.

Add:

765-C84 Biomedical Computing Principles of modern (computer-based) medical instrumentation, including analog-vs-digital design trade-off, efficient digital filter designs and algorithms for physiological signal processing, automated event recognition and classification. Hardware and software design of microcomputer-based medical instruments. Examples of specific applications. Prerequisites: ECE C06 or B70 or equivalent, and some experience in computer programming, or consent of instructor.

Chemical Engineering

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Courses Primarily for Undergraduates

710-C51-0

Change title to: Process Economics, Design, and Evaluation.

710-C52-0

Change title to: Chemical Engineering Design Projects.

add:

710-C64-0 Chemical Processing and the Environment Application of chemical engineering fundamentals to environmental problems. Chemistry and mechanisms, chemical reaction and rate, and transport emphasized. Risk assessment and analysis revealed through chemical processing industry case studies. Prerequisite: ChE B12 and ChE C07.

Civil Engineering

Pages 160-162

Courses Primarily for Undergraduates

add:

720-C34-0 Total Quality Management

How to achieve quality through continuous improvement of processes, customer satisfaction, and creating a team environment; includes data collection and analysis process improvement. Prerequisite: senior standing.

720-C38-0 Public Infrastructure Management

Addresses the complexity of managing public infrastructure facilities by means of a five-part interactive model of infrastructure management. Objective is to impart a realistic appreciation of contemporary public infrastructure management policies and practices. Prerequisite: senior standing.

Change course description:

720-C55-0 Engineering Aspects of Groundwater Flow

Applied aspects of groundwater flow and seepage including: Darcy's law, parameter determination, aquifer test analysis, flow-net construction and application, modeling techniques, slope stability analysis, drainage and filter design. Lecture and Laboratory, 4 hours. Prerequisite: Fluid Mechanics.

Change course title and description:

720-C66-0 Ecosystems and Ecotoxicology

Responses of terrestrial and aquatic ecosystems to environmental stress, with emphasis on ecotoxicological effects; ecosystem considerations in engineering problems and solutions. Prerequisite: junior standing in engineering or science.

Change in prerequisites:

720-C30-0 Construction Management

Prerequisite: pre-senior or senior standing.

720 C32-0 Construction Estimating

Prerequisite: senior standing.

Prerequisite: senior standing.

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Electrical Engineering And Computer Science:

As of September 1st, 1996, the Department of Electrical Engineering and Computer Science (EECS) will split into two departments, the Department of Electrical and Computer Engineering (ECE) and the Department of Computer Science (CS). The Computer Science major will be administered by the CS department, and the Electrical Engineering and Computer Engineering majors will be administered by the ECE department.

add new section:

Computer Science

The Department of Computer Science offers a wide variety of programs of study leading to BS, MS and PhD and BS/PhD degrees. Courses and research in the department focus on the theories, enabling technologies, and applications of modern computer Science. There is a strong focus on the design, implementation and evaluation of software systems, including interactive, distributed multimedia systems. Particular areas of research include:

Artificial intelligence, including mobile robots with perceptual systems, models of memory and reasoning, knowledge representation, natural language understanding, planning and problem solving

Theoretical computer science, including algorithm design and the analysis of their worst and average case behavior

Software engineering, including the analysis, design, implementation, evaluation and maintenance of large applications

Human computer interaction, including interface design, task modeling, intelligent interfaces and authoring tools

Distributed interactive systems, including client-server and Web-based applications, learning environments for education and training

Courses and research are highly interdisciplinary, with particularly strong connections to education and

psychology, both in shared faculty and joint research projects. Detailed information on degree requirements and courses are available from the departmental office.

Facilities

The campus is extensively networked, including dormitories, with a 100-megabit FDDI university network backbone. All students have full Internet access. Electronic mail, web sites, and other computer-based communication facilities are used to increase the bandwidth between students and faculty beyond the classroom.

The departmental facilities are intended to provide students with additional resources, from email accounts and web pages (with CGI) to high-end graphics, video, and virtual reality. For example, the department runs a shared virtual environment for students and staff, with experimental

facilities for creating new kinds of shared virtual environments.

In addition, the Department of Computer Science is the home of the Institute for the Learning Sciences, an interdisciplinary research and development center, comprising over 175 people, dedicated to building innovative educational software for schools, businesses, government, and the general community. Students are often involved in Institute projects, as independent study courses or as part of Honors Thesis work, providing valuable experience in a world-class research environment.

Courses Primarily for Undergraduates

725-A10-0 Introduction to Computer Programming

725-A11-0 Fundamentals of Computer Programming

725-A20-0 Introduction to Computers and Information Technology

725-B11-0 Fundamentals of Computer Programming II

725-B30-0 Introduction to Software Engineering

725-C10-0 Mathematical Foundations of Computer Science

725-C11-0 Data Structures and Data Management

725-C14-0 Applied Artificial Intelligence

725-C17-0 Data Management and Information Processing

725-C20-0 Formal Languages and Automata Theory

725-C22-0 Compiler Construction

725-C25-1,2 Artificial Intelligence Programming

725-C26 Programming Language Concepts

725-C27-0 Intelligent Information Management Systems

725-C32-0 Introduction to Computer Vision

725-C36-0 Design and Analysis of Algorithms

725-C37-0 Natural Language Processing

725-C39-0 Introduction to Database Systems

725-C43-1,2 Operating Systems

725-C44-0 Design of Computer Problem Solvers

725-C48-0 Introduction to Artificial Intelligence

725-C49-0 Introduction to Theorem Proving

725-C50 Introduction to Computational Linguistics

725-C51-0 Introduction to Computer Graphics

725-C52-0 Applied Combinatorics

725-C54-0 Introduction to the Theory of Parallel Computation

725-C94-1,2 Software Project Management and Development

725-C95-0 Special Topics in Computer Science

Change Course Descriptions:

C11 Data Structures and Data Management

drop the words "and Math B14-3".

C22-1,2 Compiler Construction

Change to: C22-0 Compiler Construction Implementation of compilers and embedded languages. Lexical analysis, parsing, code optimization, code generation, run-time systems, garbage collection. Prerequisite C-11.

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C32 Introduction to Computer Vision

Change to: Introduction to computer and biological vision systems. Low-level and statistical optimization, active vision and tracking, task-based vision, applications to user interface and multimedia systems. Prerequisites CS C11 and Math B17, IEMS C01 or equivalent background in statistics.

C43-1,2 Operating Systems

Change to: C43-1,2 Operating Systems

Operating systems issues and design alternative: Processes, Memory Management, File Systems, Input/Output. Prerequisite: CS C11

Electrical And Computer Engineering

The Department of Electrical and Computer Engineering has two distinct curricula electrical engineering and computer engineering both of which offer a broad range of programs leading to the BS degree. In addition, MS and PhD degrees can be pursued in Electrical and Computer Engineering. Electrical engineering is concerned with the theory, design, implementation and applications, both actual and potential, of various devices and systems based on electrical phenomena and properties. Computer engineering is concerned with applying engineering principles to computer hardware design, the interrelationship between hardware and software in making effective use of computers, the use of embedded microprocessors and distributed and parallel computing.

Because the disciplines of electrical engineering and computer engineering are very broad, their curricula are designed to appeal to students with various educational and professional goals. By properly selecting elective courses, students can specialize in one or two areas in the department or in an

interdisciplinary program. Detailed information on degree requirements and elective courses leading to these areas of specialization is given in the Electrical and Computer Engineering bulletin available in the department office.

Areas Of Specialization

EE areas (from Communication Systems to Biomedical Engineering) remain unchanged. Delete all remaining areas and replace with the following:

Computer Architecture and Systems Design

This area focuses on the design of computer system hardware. Topics include processor design, computer arithmetic, controller design, instruction set design, memory subsystems and pipelining. Computeraided design tools are used for the various levels of the design hierarchy.

Distributed and Parallel Computing

This program will introduce students to the state of the art field of high performance computing. In particular, it will deal with aspects of computing involving multiple processors working together on a common problem, including issues of computer architectures, parallel programming and algorithms, numerical computing and computer networking.

VLSI and Computer Aided Design

This area focuses on systematic approaches to designing highperformance integrated circuits consisting of millions of transistors. This specialization includes topics such as lowpower, highspeed, and reliable circuit design, hardwaresoftware codesign, design verification, design of multiFPGA systems, and CAD techniques.

Embedded Systems Design

This area focuses on the use of digital hardware to monitor and control physical systems. Topics include discretedynamics systems, digital controllers, analogtodigital converters, microprocessorbased design and the study of economic tradeoffs of different software and hardware systems.

Robotics

This area focuses on computer vision, pattern recognition and robotics. Emphasis in on the software and hardware aspects of robotic design. Topics include robotic control, kinematics, differential relations, dynamic motion and homogeneous transformations.

Laboratory And Computer Facilities

First paragraph remains the same.

The rest of the section is revised as follows.

Facilities for electrical and computer engineering include laboratories in digital systems design, microprocessor systems, microprogramming, computer communication networks, robotics, computeraided design and computer networking.

The department has major research facilities for work in distributed computing systems, database systems, computer vision, robotics, solidstate devices, fiber optics, lasers, computational electromagnetics, electronic materials and biomedical engineering. The department also has access to the facilities of the Rehabilitation Institute of Chicago and the Materials Research Center. Students in the department who are working in collaboration with faculty at university laboratories and research centers also have access to appropriate facilities at those laboratories.

The department also maintains the ECE Computing Laboratory which has many networked workstations and appropriate software to support class work and projects. The machines are also connected to external networks, allowing offsite computing.

Undergraduate majors in the department are entitled to accounts on departmental computers which are generally more powerful and less heavily used than university computers.

Courses Primarily for Undergraduates

First paragraph is to be deleted.

The following courses are to be listed as ECE courses. Unless otherwise noted course descriptions and titles are unchanged from the previous listings. In all cases the number is to be changed from 727 to 730.

730A010 Introduction to Scientific Programming and FORTRAN

730-A40-0 Introduction to Electrical and Computer Engineering

730B010 Fundamentals of Computer Organization

730B050 Fundamentals of Computer System Software will be revised next year.

730B300 Introduction to Software Engineering will be revised next year.

730B410 Circuits I

730B420 Circuits II

730B430 Circuits III

730B500 Physical Electronics

730B700 Application of Electronic Devices

730C010 Fundamentals of Electromagnetics

730C020 Probabilistic Systems and Random Signals

730C040 Electrical Machinery

730C060 Electronic Circuits

730C070 Communications

730C080 Applications of Electromagnetic Fields

730C130 Telecommunication Networks for Multimedia

730C160 Mini/Microcomputers and RealTime Applications

730C280 Numerical Methods for Engineers

730C320 Digital Image Analysis

730C330 Introduction to Communication Networks

730C410 Design of RealTime Digital Systems

730C460 Microprocessor System Design

730C470 Digital Electronic Systems Design Projects

730C530 Digital Electronic Circuits and Systems

730C550 Computer Architecture I

730C560 Computer Architecture II

730C570 Design Automation in VLSI

730C590 Digital Signal Processing

730C600 Introduction to Feedback Systems

730C630 Digital Filtering

730C650 Communication Filters

730C660 Communication Circuits

730C670 Linear Integrated Circuits

730C710 Information, Modulation and Coding

730C740 Introduction to Digital Control

730C750 Nonlinear Problems in Engineering

730C780 Digital Communications

730C800 Radiation and Wave Propagation

730C810 Electronic Materials: Properties and Applications

730C820 Introduction to Applied Optics

730C830 Lasers and Coherent Optics

730C840 SolidState Electronic Devices

730C850 SolidState Optoelectronics

730C860 Computational Electromagnetics

730C880 Microelectronic Technology

730C890 Introduction to Superconductivity and Its Applications

730C900 Introduction to Robotics

730C910 VLSI Systems Design

730C960 Engineering Design and Entrepreneurship

730C970 Special Topics in Electrical and Computer Engineering Title changes from previous title of Special Topics in Electrical Engineering

730C980 Electrical and Computer Engineering Design

730C990 Projects

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Add new course:

730-A41-0: Introduction to Electrical Engineering via Amateur Radio. Topics include modulation, coding, computer and personal communications, networking, wireless and satellite technology. Laboratory includes design and on-the-air operation of radio transmitters, and receivers in analog and digital modes - as stand-alone, wireless network and Internet components. Students earn FCC amateur radio licenses. Open to ECE freshmen and all students in other departments.

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Add new course:

730-C12-0: A Journey Through the Electronic Age. The lives and accomplishments of the leading contributors to significant developments in electronic and communication technologies will be examined in the context of their time. This is a humanities course and may not be used as a technical elective.

730-B41-0: Circuits I: change prerequisites to eliminate concurrent registration in Math B21.

Dropped course: 727-C04: Electrical Machinery

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730-C32-0: Change in title from: Introduction to Computer Vision to: Digital Image Analysis

730-C46-0: Microprocessor System Design: eliminate B01 as a prerequisite.

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730-C81-0: add missing prerequisite: C08 or consent of instructor.

730-C85-0: add missing prerequisite: C08.

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Add new course:

730-C79-0: Optics and Information Systems. Properties of optical fibers and light sources; optical modulation, switching and receivers; fiber optic communication systems and networks; optical storage and data processing systems.

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Courses Primarily for Undergraduates,

760-B52-1,2,3 Honors Calculus for Engineers

change first sentence:

Yearly sequence; alternative to standard calculus in Math B14-3, B15 and B17

to:

Yearlong sequence; alternative to standard calculus sequence. Covers more material at a deeper level, with more applications. Satisfies same requirements as Math B14-3, B15 and B17.

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add new course:

760-C46 Modeling and Computation in Science and Engineering

Construction of models of physical problems and techniques for their computation. Methods for ordinary and elementary partial differential equations and differential algebraic systems, including dynamical systems, bifurcations and chaos, are considered. Models are taken from physics, chemistry, mechanics and other application areas. Prerequisites: Math B15, B17, B21, Physics A35 1,2 or the

equivalent and familiarity with a programming language.

Industrial Engineering and Management Sciences

Courses Primarily for Undergraduates

add:

738-C07 Quality Improvement by Experimental Design: Methods for designing and analyzing industrial experiments. Planning experiments, blocking and randomization, multiple regression, factorial and fractional factorial experiments, response surface methodology, Taguchi's robust design, split plot experiments. Prerequisites: IE C03 or equivalent.

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Courses Primarily for Undergraduates

Add the following new courses:

750-A01-0 Modern Materials and Society

Course is designed for general education and is not intended for engineering majors. An introduction to basic concepts of materials. Course addresses various structural levels of materials from the electronic to the macroscopic, general classes of materials (metals, ceramics, plastics, semiconductors) and what differentiates one class from the others, how materials function for specific applications (e.g., mechanical, electrical, optical, etc.), how they are fabricated, and how their use impacts modern society for good (e.g., ease or quality of life) or for ill (e.g., warfare, pollution). Prerequisites: none. *Fulfills CAS distribution requirements.*

750-C91-0 Process Design

Processing of all classes of materials. Analysis of properties based on various input and processing parameters. Utilization of design and analysis of experiments to rapidly and efficiently identify key parametrics and optimize these to control design properties and performance. Resolving conflicting requirements. Statistical process control methodologies.

750-C85-0 Stereology

Change name of to "Image Analysis"

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Mechanical Engineering

740-B24-0 Experimental Engineering

change prerequisites to B20, B41, CE B16 and ECE B70.

740-C40-1,2 Delete entire paragraph and replace with the following:

740-C40-1, 2, 3 Computer-Integrated Manufacturing. Use of computers to improve productivity and reduce costs in the manufacture of discrete parts and assemblies.

1. Manufacturing Processes. Analysis and evaluation of process usage in the contemporary manufacturing environment. Prerequisite: B40 or consent of instructor.

2. CAD/CAM. Geometric modeling, dimensioning systems, tolerances, design for manufacture, programming of machine tools. Prerequisites: C40-1 and CE B16 or consent of instructor.

3. Manufacturing Automation. Metrology, machine tool control, forming processes, parts feeding, assembly, robotics, factory control, communications. Prerequisite: C40-2 or consent of instructor.

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Supplement to: **1995-97 Northwestern Undergraduate Study**

Other Undergraduate Programs

International Studies Program

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Under Courses add the following:

495-B02-0 International Ethics

Study of ethics as it relates to international relations. What are the principles of a good foreign policy? Can statesmen be held morally accountable for their acts, or are the vicissitudes of international politics such that they cannot? If it is possible to hold them to moral standards, what are those standards?

495-C99-0 Independent Research

Advanced research carried out under the supervision of a professor in a department related to the area of study. Only with approval of the director of the Undergraduate major, following submission of a written proposal.

Writing Arts, Center for the

Page 224

Under Courses add the following:

486-A11-1,2 Modes of Writing: Self-Sacrifice: The Martyr in History and Fiction

Moral problem of self-sacrifice ranging from altruism to that which is a camouflage for self-service and pride; writing skills developed through discussion, analysis, and extensive writing assignments. Must take A11-2 in the quarter following A11-1; P/N not allowed. Prerequisite for A11-1: freshman standing; prerequisite for A11-2: A11-1

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Supplement to: **1995-97 Northwestern Undergraduate Study**

Administration and Faculty

- [College of Arts and Sciences](#)
- [School of Education and Social Policy](#)
- [McCormick School of Engineering & Applied Science](#)
- [Medill School of Journalism](#)
- [School of Music](#)
- [School of Speech](#)

College of Arts and Sciences

Page 227

Administration

Replace Lawrence B. Dumas with

Neena B. Schwartz, PhD

Acting Dean of the College of Arts and Sciences and Professor of Neurobiology and Physiology

Page 227

African and Asian Languages

Add:

Junko Sato (M Ed Massachusetts)

Lecturer

Yumi Shiojima (M Ed Pennsylvania)

Lecturer

Change:

Muhammed S. Eissa (PhD Al-Azher)

College Lecturer

Edna G. Grad (PhD Texas)

College Lecturer

Wen-hsiung Hsu (PhD Chicago)

College Lecturer

Art History

Add:

Diane Dillon (PhD Yale)

Assistant Professor

Sarah Fraser (PhD Calif Berkeley)

Visiting Instructor

Angela Rosenthal (PhD Trier)

Assistant Professor

Art Theory and Practice

Delete:

Kyle Bagwell

Faruk Gul

Judith Hellerstein

James Montgomery

Mark W. Watson

English

Change:

Betsy Erkkila (PhD Calif Berkeley)

Professor and Chair

Sharon Achinstein (PhD Princeton)

Associate Professor

Wendy Wall (PhD Pennsylvania)

Associate Professor

Delete:

Olakunle George

Nicola Watson

William B. Worthen

French and Italian

Change:

Albert Ascoli (PhD Cornell)

Professor

Phyllis Horn-Liparini (MA Northwestern)

Lecturer

Michael Wyatt (STB Gregorian University, Rome)

Lecturer

Michal Ginsburg (PhD Yale)

Professor and Chair

German

Change:

Kerstin Behnke (MA Illinois)

Lecturer

Géza von Molnár (PhD Stanford)

Professor and Chair

Add:

William Cass (MFA School of the Art Institute)

Lecturer

Judy Ledgerwood (MFA School of the Art Institute)

Assistant Professor

Biological Sciences

Change:

Gary J. Galbreath (PhD Chicago)

College Lecturer and Associate Director

Chemistry

Add:

Barry Coddens (PhD Wayne State)

Lecturer and Director of Undergraduate Studies

Economics

Add:

Jeffrey C. Ely (PhD Calif Berkeley)

Assistant Professor

Change:

Robert J. Gordon (PhD MIT)

Stanley G. Harris Professor of the Social Sciences

Joel Mokyr (PhD Yale)

Robert H. Strotz Professor of Economics

Leon N. Moses (PhD Harvard)

King Professor of Business Institutions; also Transportation Center, Center for Urban Affairs and Policy Research

William P. Rogerson (PhD Caltech)

Professor and Chair; also Center for Urban Affairs

Ian P. Savage (PhD Leeds)

Senior Lecturer and Assistant Chair; also Transportation Center

Burton Weisbrod (PhD Northwestern)

John Evans Chair of Economics; also Center for Urban Affairs and Policy Research

History

Add:

David Austen-Smith (PhD Cambridge)

Professor; also Management and Strategy, KGSM

Bruce Cumings (PhD Columbia)

John Evans Professor of International History and Politics; Director - Center for Comparative and International Studies

Jeffrey Winters (PhD Yale)

Associate Professor; also Center for Urban Affairs and Policy Research

Delete:

William Crotty

Jane Mansbridge

Linguistics

Change:

Beth C. Levin (PhD MIT)

Professor and Chair

Janet Pierrehumbert (PhD MIT)

Professor

Mathematics

Change:

Clark Robinson (PhD Calif Berkeley)

Professor and Chair

Stephen D. Fisher (PhD Wisconsin)

Professor

Physics and Astronomy

Change:

Deborah Brown (PhD Northwestern)

Senior Lecturer

Diane Dutkevitch (PhD Massachusetts)

Lecturer

David Meyer (PhD UCLA)

Associate Professor

Heidi Schellman (PhD Calif Berkeley)

Associate Professor

Farhad Y. Zadeh (PhD Columbia)

Associate Professor

Delete:

Martin Block

Eric Braaten

Donald Miller

George Wong

Religion

Change:

Richard Kieckhefer (PhD Texas)

Professor and Chair; also History

George Bond (PhD Northwestern)

Professor

Sociology

Add:

William Occasio (PhD Stanford)

Assistant Professor; also Organization Behavior

Marc Ventresca (PhD Stanford)

Assistant Professor; also Organization Behavior

Change:

Orville Lee (PhD Calif Berkeley)

Assistant Professor

Charles M. Payne (PhD Northwestern)

Charles Deering McCormick Professor; also Chair, African-American Studies

Linda A. Teplin (PhD Northwestern)

Professor; also Psychiatry

Edward J. Zajac (PhD Pennsylvania)

Professor; also Organization Behavior

Delete:

Christopher Jencks

Jane J. Mansbridge

Statistics

Delete:

Mark W. Watson

Writing Program

Change:

Frances F. Paden (PhD Northwestern)

Senior Lecturer

Edith Skom (PhD Northwestern)

Senior Lecturer

Jean R. Smith (PhD Northwestern)

Senior Lecturer

Charles Yarnoff (PhD Northwestern)

Senior Lecturer

School of Education and Social Policy

Administration

delete: Roy D. Pea

change:

Solomon Cytrynbaum, PhD to

Acting Dean and Professor

add:

Coleen T. Coleman, MS

Assistant Dean

page 240

Faculty

delete:

Ed de St. Aubin

Joyce A. Jones

James Hall

add:

Eric Domeshek (PhD Yale)

Assistant Professor; also Electrical Engineering and Computer Science

page 241

delete:

Roy Pea

Charles Pistorio

Ronald Saul

add:

Michael Radnor (PhD Northwestern)

Professor, also Organization Behavior

Lance J. Rips (PhD Stanford)

Professor; also Psychology

James P. Spillane (PhD Michigan State)

Assistant Professor

Linda A. Teplin (PhD Northwestern)

Professor; also Clinical Psychology

David Uttal (PhD Michigan)

Assistant Professor; also Psychology

Joseph B. Walther (PhD Arizona)

Assistant Professor; also Communication Studies Robert R. McCormick School of Engineering and Applied Science

Robert R. McCormick School of Engineering and Applied Science

Page 242

Administration

Change:

Geraldine O. Garner, EdD

Associate Dean; Director, Murphy Cooperative Engineering Education Program; and Associate Professor of Cooperative Engineering Education

Biomedical Engineering

Add:

Robert M. Judd (PhD SUNY-Buffalo)

Assistant Professor, Medicine

Delete

Richard S. H. Mah

Industrial Engineering and Management Sciences

Add:

Bruce Ankenman (Ph.D. Wisconsin, Madison)

Assistant Professor

Barry Nelson (Ph.D. Purdue)

Associate Professor

Change:

Ajitkumar C. Tamhane

to Ajit C. Tamhane.

Delete:

Gustave J. Rath

page 245

Engineering Sciences and Applied Mathematics

add:

David L. Chopp (PhD Berkeley)

Assistant Professor

Page 246

Materials Science and Engineering

Change:

Scott Barnett

Professor

Vinayak Dravid

Associate Professor

Thomas Mason

James N. and Margie M. Krebs Professor

David Seidman

Walter P. Murphy Professor

Ken Shull:

Morris E. Fine Professor of Materials and Manufacturing to Assistant Professor

Francis J. Klocke (MD SUNY-Buffalo)

Professor, Medicine; also Director, Feinberg Cardiovascular Research Institute

Change:

Andrew E. Kertesz:

change *Electrical Engineering and Computer Science*

to *Electrical and Computer Engineering*

Scott L. Delp

Associate Professor

James B. Grotberg

change *Anesthesia* to *Anesthesiology*

Lina L. E. Massone

change *Electrical Engineering and Computer Science*

to *Electrical and Computer Engineering*

Alan V. Sahakian

change *Electrical Engineering and Computer Science*

to *Electrical and Computer Engineering*

Christopher M. Waters

change *Anesthesia* to *Anesthesiology*

Delete:

Thomas S. Buchanan

David M. Eckmann

Chemical Engineering

Add:

Annelise E. Barron (PhD Calif Berkeley)

Assistant Professor

Change:

Wesley R. Burghardt (PhD Stanford)

Associate Professor.

William M. Miller (PhD Calif Berkeley)

Associate Professor and Associate Chair.

Mechanical Engineering

Add:

Jian Cao (PhD MIT)

Assistant Professor

Change:

Sridhar Krishnaswamy

Associate Professor

Richard M. Lueptow (PhD MIT)

Associate Professor

Page 247

Change:

Bernard J. Matkowsky

from also Mathematics

to also Engineering Sciences and Applied Mathematics

Medill School of Journalism

Integrated Marketing Communications

delete:

Ronald B. Kaatz

add:

Francis J. Mulhern (PhD Texas at Austin)

Assistant Professor

Editorial

change:

Jack C. Doppelt (JD Chicago)

Associate Professor; Associate Dean

change:

Robert K. LeBailly (MA Northwestern)

Senior Lecturer

delete:

Michael O'Donnell

add:

Frank Starr (BA Indiana)

Assistant Professor

School of Music

Administration

delete:

Paul A. Aliapoulios, MusAD

Cochair of Music Performance Studies and Professor of Music

Peter Slowik MMus

Cochair of Music Performance Studies and Associate Professor of Viola

add:

Robert Barris, MMus

Cochair of Music Performance Studies and Professor of Music

Marcia Bosits Norrman, DMus

Cochair of Music Performance Studies and Professor of Music

delete:

Donald E. Casey Jr. (EdD Illinois)

Associate Professor; Coordinator of Music Education Program

Thomas W. Miller (MusAD Boston)

Professor

Theodore C. Karp (PhD NYU)

Professor

Richard Ashley (DMusA Illinois)

Associate Professor; also Music Theory

Nancy Rogers (MMus Michigan)

Lecturer

Mitchell Arnold (MMus Northwestern)

Lecturer; Assistant Director of Orchestras

Matthew Ludwig (MMus Northwestern)

Lecturer; Assistant Director of Bands

Music History and Literature Program

add:

Thomas Bauman (PhD Calif Berkeley)
Professor

Conducting and Ensembles Program

add:

Mallory Thompson (DMus Eastman)

Professor; Director of Bands

Mariusz Smolij (MMus Tennessee)

Assistant Professor; Assistant Director of Orchestras

Page 250

delete:

John P. Paynter (MMus Northwestern)

Professor; Director of Band Organizations

Donald J. Isaak (DMus Northwestern)

Associate Professor

*Jane MacAlla-Livingston (MMus Northwestern)

Lecturer

*Tracey Finkelshteyn (MMus Yale)

Lecturer in Violin and Viola

*Stephen Lester (MusAD Boston)

Lecturer in Double Bass

*Robert Swan (MMus Indiana)

Lecturer in Strings

Voice and Opera Program

add:

Michael Ehrman (BS Northwestern)

Associate Professor; Director of Opera

Page 251

Wind and Percussion Instruments Program

delete:

*Joel Cohen (MMus Roosevelt)

Lecturer in Percussion

Edward Harrison (MMus New England)

Lecturer in Percussion

add:

Leslie Grimm (MMus Northwestern)

Lecturer in Clarinet

Alexandre Klein (Artist's Diploma Oberlin)

Associate Professor of Oboe

School of Speech

Communication Sciences and Disorders

Page 252

add:

Kimberly Fisher (PhD Oklahoma)

Assistant Professor of Speech and Language Pathology

Yi Xu (PhD Connecticut)

Assistant Professor of Speech and Language Pathology

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