DESCRIPTIONS of COURSES 1987

This section provides descriptions of all courses given by the University at both the undergraduate and graduate levels. The courses are listed in the schools and departments which give the instruction. The schools and departments are arranged in alphabetical sequence.

Refer to the statements on credits and Course Formats and Credits in the Academic Programs section of the catalog.

COURSE NUMBERS

001-099 Non-Credit Courses

Courses with these numbers are offered by the University to permit students to make up deficiencies in previous training or to improve their facility in certain basic skills without earning credit.

For information about remedial-developmental-preparatory courses, consult the Academic Programs section of the catalog.

100-299 Undergraduate Courses

Courses with these numbers are for undergraduate students. They carry no graduate credit, although graduate students may be admitted to such courses in order to make up prerequisites or to gain a foundation for advanced courses.

For information about remedial-developmental-preparatory courses, consult the Academic Programs section of the catalog.

300-499 Advanced Undergraduate Courses

Courses with these numbers are for advanced undergraduate students. They constitute the advanced portion of an undergraduate program leading to the bachelor's degree. A graduate student may carry 400 level courses for credit upon approval of the student's major department and the department offering the course. In exceptional cases, a graduate student may petition the dean of his or her college, in writing, for approval of a 300 level course for graduate credit.

500-699 Graduate-Professional Courses

Courses with these numbers are courses in the graduate-professional programs. A graduate student may carry these courses for credit with approval of the major department.

800-899 Graduate Courses

Courses with these numbers are for graduate students. Advanced undergraduates with a 3.00 or better grade-point average in their total programs may be admitted to 800-899 level courses; others, if recommended by their academic adviser and approved by their dean. At least 23 credits of the total required for a master's degree shall be taken at the 800 and 900 level except as specifically exempted by the dean of the college.

900-999 Advanced Graduate Courses

Courses with these numbers are exclusively for graduate students and primarily for advanced graduate students. A master's degree candidate may take these courses with the approval of the major department, with the exception of courses numbered 989 (doctoral dissertation research). Admission to a doctoral degree program is a prerequisite of all courses numbered 999.

VARIABLE CREDIT COURSES

For each variable credit course, the range of credits for which a student may enroll in a given term shall be specified.

Except for courses numbered 899 (Master's Thesis Research) and 999 (Doctoral Dissertation Research), the maximum number of credits that a student may earn in a course with a reenrollment provision shall be specified.

MULTITITLED COURSES

A multititled course is one that has been approved as such by the Academic Council upon recommendation of the Full Committee, University Committee on Curriculum (UCC). Approval of a course as a multititled course shall include authorization for subtitles for the course to be established. Approved subtitles shall have the same status as separately approved courses that are included in the Descriptions of Courses section of the University catalog. For example, an approved subtitle shall be included in the Schedule of Courses in place of the general, authorized title for the multititled course and shall appear on students' academic records (including transcripts). Multititled courses are identified as such by the coding 'MTC' after the course titles.

Multititled courses may have approved subtitles. A subtitle of a multititled course represents a subject matter area that is related to the course and that has been approved as a subtitle for that course by the Full Committee, UCC, upon recommendation of the appropriate UCC subcommittee.

COURSE LISTINGS

This material has three categories.

A. The course number and title including:

The course number suffixes:

1 — Type I
2 — Type II Remedial-Develop-
3 — Type III mental-Preparatory
4 — Type IV Courses.
5 — Type V

For additional information about remedial-developmental-preparatory courses, consult the Academic Programs section of the catalog.
The General Education designation code in parentheses following the title:
(A) — Arts and Humanities
(N) — Biological, Physical, and Mathematical Sciences
(S) — Social and Behavioral Sciences.

For additional information, refer to the section on Courses Approved for General Education Designation beginning on page A-3.

The multitled course designation code in parentheses (MTC) following the title of any course that has been approved as a multitled course.

The material in italics which includes:
1 The former course number in parentheses if the course number has been changed within the past 5 years.
2 The term or terms the course is authorized to be given. Lack of staff or low student enrollment may preclude offering the course, particularly at the advanced level, every term for which it is authorized.
3 The term credits are designated to include class hours a week as follows: A(B-C) where:
   A = Number of term (quarter) credits.
   B = Number of class hours a week in lecture, recitation, quiz, etc., sections.
   C = Number of class hours a week in laboratory.

If the credit is indicated to be variable, the number of credits is to be determined at the time of enrollment. If the course is a non-credit course, the credit-equivalent is given in brackets.

4 The course number(s) or other information indicates the preparation or classification prerequisite to enrollment in the course. If a course alpha code and number are listed, the reference is to a course indicated by the code. The alpha codes and the corresponding names are listed on this page. The prerequisite may be satisfied by the course or courses indicated or equivalent background. If a class standing such as juniors is listed, only students with that or a higher class level are eligible for enrollment. A student who is unsure of eligibility for enrolling in a course should contact the department, school, or college that administers the course.

A brief description of the course.

Course Alpha Code Designations

The codes are listed in alphabetical order. The departments are listed in alphabetical sequence by their names in the pages which follow.

ALPHA CODE | NAME
---|---
A | Agricultural Engineering
A | Arts and Letters (College of)
A | Aerospace Studies
A | Accounting
A | Agricultural Economics
A | Agricultural Engineering
A | Agricultural and Extension Education
A | Agricultural Engineering Technology—See Agricultural Engineering
A | African Languages—See Linguistics and Germanic, Slavic, Asian and African Languages
A | American Studies
A | Anthropology
A | Agriculture and Natural Resources
A | Animal Science
A | Anatomy
A | Arab—See Linguistics and Germanic, Slavic, Asian and African Languages
A | Audiology and Speech Sciences
A | Astronomy and Astrophysics—See Physics and Astronomy
A | American Thought and Language
A | Biological Science
A | Biochemistry
A | Building Construction Management—See Agricultural Engineering
A | Biomechanics
A | Biomedical Engineering
A | Botany and Plant Pathology
A | Civil Engineering
A | Criminal Justice
A | Communication Arts and Sciences (College of)
A | Chemistry
A | Counseling, Educational Psychology and Special Education
A | Chemical Engineering
A | Chinese—See Linguistics and Germanic, Slavic, Asian and African Languages
A | Classical Studies—See Romance and Classical Languages
A | Community Health Science
A | Communication
A | Computer Science
A | Crop and Soil Sciences
A | Electrical Engineering
A | Earth Science—See Geological Sciences
A | Educational Administration
A | Economics
A | Engineering
A | Environmental Engineering—See Civil and Environmental Engineering
A | English
A | Entomology
A | Finance and Insurance
A | Family Medicine
A | Fisheries and Wildlife
A | Family and Child Ecology
A | Family Practice
A | Forestry
A | French—See Romance and Classical Languages
A | Food Science
A | Food Systems Economics and Management—See Agricultural Economics
A | German and Russian—See Linguistics, Germanic, Slavic, Asian and African Languages
A | General Business and Business Law
A | Genetics
A | Geography
A | Geology—See Geological Sciences
A | Greek—See Romance and Classical Languages
A | German—See Linguistics, Germanic, Slavic, Asian and African Languages
A | History of Art—See Art
A | Human Medicine (College of)
A | Health Education, Counseling Psychology and Human Performance
A | Hebrew—See Linguistics and Germanic, Slavic, Asian and African Languages
A | Human Ecology (College of)
A | Human Environment and Design
A | Human Nutrition and Foods—See Food Science and Human Nutrition
A | Hotel, Restaurant and Institutional Management
A | Horticulture
A | History
A | Humanities
A | Internal Medicine
A | Improvement Service
A | Interdisciplinary Courses
A | Italian—See Romance and Classical Languages
A | Japanese—See Linguistics and Germanic, Slavic, Asian and African Languages
A | Journalism
A | Landscape Architecture—See Geography
A | Lyman Briggs School
A | Large Animal Clinical Sciences
A | Linguistics—See Linguistics and Germanic, Slavic, Asian and African Languages
A | Labor and Industrial Relations
A | Linguistics and Oriental and African Languages—See Linguistics and Germanic, Slavic, Asian and African Languages
A | Latin—See Romance and Classical Languages
A | James Madison College
A | Mechanical Engineering
A | Military Science
A | Medical Technology
A | Medicine
A | Management
A | Metallurgy, Mechanics, and Materials Science
A | Microbiology and Public Health
A | Marketing and Transportation Administration
GROUPINGS OF COURSES APPROVED FOR GENERAL EDUCATION CREDIT

Each student must earn a minimum of 45 credits in General Education in courses divided among the following four areas: written and oral communication; arts and humanities; biological, physical, and mathematical sciences; and social and behavioral sciences. In meeting the minimum of 45 credits, no fewer than 9 credits and no more than 16 credits shall be taken to satisfy the General Education requirement in each of the four areas. Students must meet the written and oral communication General Education requirement by completing 9 credits in appropriate American Thought and Language courses.

Beginning in the Fall of 1982, any student who has not completed the General Education requirements in the arts and humanities; biological, physical, and mathematical sciences; and social and behavioral sciences must meet these requirements in accordance with the statements on the groupings of courses in these areas that follow. If after completing a prescribed grouping of courses in each of the three areas the General Education credits do not total 36, the student must select an additional course approved for General Education from any of the three areas.

The planned groupings of courses approved for General Education in the arts and humanities and social and behavioral sciences areas are arranged according to:

Option A — groupings of courses arranged as three term sequences/series representing a broadly integrative perspective on selected topics or issues.

Option B — groupings of courses arranged according to specific emphases representing selected approaches to knowledge within the relevant area or emphases on topics or issues within the area.

The planned groupings of courses approved for General Education in the biological, physical, and mathematical sciences correspond to Option B as described above.

The General Education courses that are offered each term are included in the appropriate departmental listings in the Schedule of Courses. For additional information concerning the University’s general education requirements, refer to the Academic Programs section of the University Catalog.

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**GROUPINGS OF GENERAL EDUCATION COURSES IN THE ARTS AND HUMANITIES**

Students complete either Option A or Option B

Option A — Students take all three courses in one of the following series/sequences. Additional series/sequences of courses are available to students who elect to complete three courses in the Department of Humanities; each such series/sequence is comprised of three courses, one of which ends in number 1, one of which ends in number 2, and one of which ends in number 3.

<table>
<thead>
<tr>
<th>CODE</th>
<th>NAME</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH</td>
<td>Mathematics</td>
<td>A-1 311 Great Cities, Arts and Ideals: The Western Classical Age (A) ... 4</td>
</tr>
<tr>
<td>MUS</td>
<td>Music</td>
<td>A-2 312 Great Cities, Arts and Ideals: The Renaissance (A) ... 4</td>
</tr>
<tr>
<td>NE</td>
<td>Nursing (College of)</td>
<td>A-3 313 Great Cities, Arts and Ideals: The Modern World (A) ... 4</td>
</tr>
<tr>
<td>NS</td>
<td>Natural Science</td>
<td>A-4 241 German Literature in English Translation (A) ... 3</td>
</tr>
<tr>
<td>NSC</td>
<td>Natural Science (College of)</td>
<td>A-5 242 German Literature in English Translation (A) ... 3</td>
</tr>
<tr>
<td>OAM</td>
<td>Osteopathic Medicine</td>
<td>A-6 243 German Literature in English Translation (A) ... 3</td>
</tr>
<tr>
<td>OCR</td>
<td>Obstetrics, Cynecology, and Reproductive Biology</td>
<td>A-7 206 History of Western Art: The Ancient World (A) ... 4</td>
</tr>
<tr>
<td>OST</td>
<td>Osteopathic Medicine (College of)</td>
<td>A-8 207 History of Western Art: The Middle Ages and the Renaissance (A) ... 4</td>
</tr>
<tr>
<td>PAM</td>
<td>Public Affairs Management—See Agricultural Economics</td>
<td>A-9 208 History of Western Art: The Early Modern (A) ... 4</td>
</tr>
<tr>
<td>PED</td>
<td>Pediatrics</td>
<td>A-10 111 The Roots of European History (A) ... 4</td>
</tr>
<tr>
<td>PEDH</td>
<td>Pediatrics and Human Development</td>
<td>A-11 112 Maturing of European Civilization (A) ... 4</td>
</tr>
<tr>
<td>PHIL</td>
<td>Philosophy</td>
<td>A-12 113 Europe in the Modern Age (A) ... 4</td>
</tr>
<tr>
<td>PHEM</td>
<td>Pharmacology and Toxicology</td>
<td>A-13 201 Humanities in the Western World: Ancient (A) ... 4</td>
</tr>
<tr>
<td>PHYS</td>
<td>Physics—See Physics and Astronomy</td>
<td>A-14 202 Humanities in the Western World: Medieval and Early Modern (A) ... 4</td>
</tr>
<tr>
<td>PHY</td>
<td>Physics—See Physics and Astronomy</td>
<td>A-15 203 Humanities in the Western World: Modern (A) ... 4</td>
</tr>
<tr>
<td>PKC</td>
<td>Packaging</td>
<td>A-16 211 Great Books of Western Culture, Ancient (A) ... 4</td>
</tr>
<tr>
<td>POLI</td>
<td>Political Science</td>
<td>A-17 212 Great Books of Western Culture, Medieval and Early Modern (A) ... 4</td>
</tr>
<tr>
<td>POLS</td>
<td>Political Science</td>
<td>A-18 213 Great Books of Western Culture, Modern (A) ... 4</td>
</tr>
<tr>
<td>PSY</td>
<td>Psychology</td>
<td>A-19 221 The Modern World (A) ... 4</td>
</tr>
<tr>
<td>PSC</td>
<td>Psychiatry</td>
<td>A-20 222 The Visual Arts and Western Culture, Ancient (A) ... 4</td>
</tr>
<tr>
<td>PSY</td>
<td>Psychology</td>
<td>A-21 223 The Visual Arts and Western Culture, Medieval and Early Modern (A) ... 4</td>
</tr>
<tr>
<td>PSS</td>
<td>Psychiatry</td>
<td>A-22 231 The Visual Arts and Western Culture, Modern (A) ... 4</td>
</tr>
<tr>
<td>PSSL</td>
<td>Psychiatry</td>
<td>A-23 232 Music and Western Culture, Ancient (A) ... 4</td>
</tr>
<tr>
<td>PSC</td>
<td>Psychiatry</td>
<td>A-24 233 Music and Western Culture, Medieval and Early Modern (A) ... 4</td>
</tr>
<tr>
<td>PVC</td>
<td>Packaging</td>
<td>A-25 234 Music and Western Culture, Modern (A) ... 4</td>
</tr>
</tbody>
</table>

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1 Courses approved for General Education by the Academic Council will be counted toward the General Education requirements in accordance with the effective date for General Education approval. No course that was offered prior to the effective date for General Education approval shall be counted toward the requirements.

Any course that had General Education approval, but no longer has General Education approval, will be counted toward the General Education requirements if the course was completed during the period for which it had General Education approval. Any student who completed such a course should consult his or her academic adviser regarding the completion of the General Education requirements.

The current policy on substitutions shall remain in effect until such time as section 3 of the 1960 General Education Policy is implemented. At the present time, a college, or a department with the approval of the college, may permit or require its major and major preference students to substitute certain alternative courses for those approved for General Education credit in the areas which is closest to the student's major.
B-3 Emphasis in Language and Literature

A L 345 Jewish Humanities in the Twentieth Century (A) .......................... 4
ENG 344 Jewish-American Literature (A) ............................................. 3
F RN 341 French Literary Masterpieces in English Translation (A) .......... 3
CRM 241 German Literature in English Translation (A) ....................... 3
CRM 242 German Literature in English Translation (A) ....................... 3
CRM 243 German Literature in English Translation (A) ....................... 3
HUM 211 Great Books of Western Culture, Ancient (A) ....................... 4
HUM 212 Great Books of Western Culture, Medieval and Early Modern (A) 4
HUM 213 Great Books of Western Culture, Modern (A) ....................... 4
HUM 205 The Cultural Traditions of Sub-Saharan Africa (A) ............... 4
HUM 207 The Cultural Traditions of India (A) ................................. 4
ITL 341 Italian Literary Masterpieces in English Translation (A) .......... 4
PHL 300 Philosophy in Literature (A) .................................................. 3
ROM 241 Masterpieces of the Romance Literatures in English Translation (A) 4
ROM 242 Masterpieces of the Romance Literatures in English Translation (A) 4

GROUPINGS OF GENERAL EDUCATION COURSES IN THE BIOLOGICAL, PHYSICAL, AND MATHEMATICAL SCIENCES

Students complete a minimum of three courses; at least one course must be from each of the two major emphases and at least one course must include a laboratory experience. Only one course from each of the following groups may be counted toward the General Education requirements: N S 122, N S 125, N S 162, AST 119, AST 217, N S 155.

1. Emphasis on The Philosophy and Methods of Science

1A Biological Science content
NS 115 The Nature and Continuity of Life (N) (Lab) .......................... 4
NS 1614 Natural Science (N) (Lab) ........................... 4

1B Geological and Historical content
NS 122 Human Biocultural Evolution (N) (Lab) .......................... 4
NS 125 Time and Change in Nature (N) (Lab) .......................... 4
NS 1824 Natural Science (N) (Lab) ............................. 4

1C Physical Science content
AST 119 General Astronomy (N) .......................................................... 4
AST 217 General Astronomy (N) .......................................................... 4
NS 135 Changing Concepts of the Universe (N) (Lab) ....................... 4
NS 1824 Natural Science (N) (Lab) ....................................................... 4
PHY 201 The Science of Sound I: Rock, Bach and Oscillation (N) .......... 4

2. Emphasis on Science and Society

2A Issues in Human Biology
F SC 101 Food and Society (N) .............................................................. 3
HNF 102 Nutrition for Life: The Nutrition of Today's Men and Women (N) 4
NS 120 Biotechnology and Human Values (N) .................................. 4
NS 171H Our Biological Nature (N) ..................................................... 4
SPH 201 Human and Disease (N) .......................................................... 4

2B Issues in Environmental Science
BOT 201 Plants, People and the Environment (N) ............................... 3
ENT 201 Insects and Society (N) ............................................................ 4
ENT 250 Pets, Environmental Quality and Ecosystem Management (N) 3
GLG 260 Geology of Human Environment (N) .................................. 4
NS 142 Life, Its Environment (N) (Lab) ............................................... 4
NS 175H Our Place in Nature (N) .......................................................... 4
NS 1445 Wildlife Environmental Field Studies (N) ............................. 4
PHY 226 Energy Consumption and Environmental Quality (N) .......... 4

A-4
2C Science and Human Values
N S 192 Science and Culture in the 20th Century (N) 4
N S 155 Cosmology, Humanity's Place in the Universe (N) (Lab) 4
N S 102 Race, The Evolution of an Idea (N) (Lab) 4
N S 173H Science, Technology and Human Values (N) 4
FRTY 205 Bohr and Einstein: The Concept of Nature in Our Day (N) 4

1 NS 1814, NS 1824, and NS 1834 are designed for students who are enrolled in the Remedial-Developmental Writing Program. The General Education requirement in the Biological, Physical, and Mathematical Sciences may be met by completing NS 1814, NS 1824, and NS 1834.
2 NS 171H, NS 172H, and NS 173H are designed for honors students. The General Education requirement in the Biological, Physical, and Mathematical Sciences may be met by completing NS 171H, NS 172H, and NS 173H.

GROUPINGS OF GENERAL EDUCATION COURSES IN THE SOCIAL AND BEHAVIORAL SCIENCES

Students complete either Option A or Option B

Option A  Students take all three courses in one of the following series/sequences.
  A-1  SS 201 Americans and Their Values (S) 4
  SS 202 Power in America (S) 4
  SS 203 America and World Problems (S) 4
  A-2  SS 211 Becoming Human: The Social Scientific Perspective (S) 4
  SS 211 Coping with Changing Institutions in Modern Society (S) 4
  SS 213 Casualties of Contemporary Society (S) 4
  A-3  SS 221 The Individual and Metropolitan Society (S) 4
  SS 222 Economics, Politics and the Individual in the Metropolis (S) 4
  SS 223 World Urbanization: Cultures and Common Issues (S) 4
  A-4  SS 241 Cultures in Crisis (S) 4
  SS 242 Freedom and Justice (S) 4
  SS 243 War and Morality (S) 4
  A-6  SS 251 Human Perspectives on Urbanization (S) 4
  SS 252 Historical Roots of Racism and Ethnocentrism (S) 4
  SS 253 Minorities in American Cities (S) 4
  A-7  SOC 150 The Individual in Modern Society (S) 4
  SOC 160 Structural Problems of American Society (S) 4
  SOC 170 International Problems of Change and Development (S) 4

Option B  Students take one course in each of the following emphases.

B-1 Emphasis on the Individual and Society
B-2 Emphasis on Social Institutions and Processes
B-3 Emphasis on Global Interdependence and Conflict

B-1 Emphasis on the Individual and Society
ANP 171 Introduction to Sociocultural Anthropology (S) 4
FLS 351 Human Values and Politics: On Liberty (S) 4
FLS 353 Human Values and Politics: Authority and the Individual (S) 4
SS 201 Americans and Their Values (S) 4
SS 211 Becoming Human: The Social Scientific Perspective (S) 4
SS 221 The Individual and Metropolitan Society (S) 4
SS 241 Cultures in Crisis (S) 4
SS 251 Human Perspectives on Urbanization (S) 4
SOC 190 The Individual in Modern Society (S) 4

B-2 Emphasis on Social Institutions and Processes
ANP 250 Culture, Environment and Adaptation (S) 4
GEO 100 People, Location and Environment (S) 4
SS 202 Power in America (S) 4
SS 212 Coping with Changing Institutions in Modern Society (S) 4
SS 213 Casualties of Contemporary Society (S) 4
SS 222 Economics, Politics and the Individual in the Metropolis (S) 4
SS 223 Freedom and Justice (S) 4
SS 252 Historical Roots of Racism and Ethnocentrism (S) 4
SS 253 Minorities in American Cities (S) 4
SOC 190 Structural Problems of American Society (S) 4

B-3 Emphasis on Global Interdependence and Conflict
GEO 204 World Regional Geography (S) 4
SS 203 America and World Problems (S) 4
SS 223 World Urbanization: Cultures and Common Issues (S) 4
SS 243 War and Morality (S) 4
SOC 170 International Problems of Change and Development (S) 4
UP 231 Evolution of Urban Communities (S) 4