

2006-2008 Addendum

This addendum to the 2006-2008 Carnegie Mellon Undergraduate Catalog presents new academic programs as well as changes in existing programs and policies for the 2007-2008 academic year. The editorial staff apologizes that due to space limitations, certain material such as the addition of new faculty could not be included.

New programs are approved and existing programs are changed at various times throughout the year. The complete Undergraduate Catalog can be accessed online at www.cmu.edu/esg-cat. The 2008-2010 catalog will be published during the summer of 2008. All changes and suggestions for improvement will be considered. Please direct your comments to:

William F. Elliott
Vice President for Enrollment

Cost of Attendance for 2007-2008

	Freshmen Fall 2007	Undergrads who Entered Fall 2006	Undergrads who entered prior to Fall 2006
Resident			
Tuition	\$36,950	\$35,580	\$34,405
Activity Fee	172	172	172
PAT Fee	72	72	72
Technology Fee	150	150	150
Media Fee	10	10	10
Orientation Fee - <i>freshmen</i>	190	0	0
Room ⁽¹⁾	5663	5663	5663
Dining	3997	3687	3687
Books & Supplies ^(3,4)	966	966	966
Personal & Misc. ⁽⁴⁾	1335	1335	1335
Transportation ⁽⁴⁾	0	0	0
TOTAL	\$49,505	\$47,635	\$46,460
Commuter			
Tuition	\$36,950	\$35,580	\$34,405
Activity Fee	172	172	172
PAT Fee	72	72	72
Technology Fee	150	150	150
Media Fee	10	10	10
Orientation Fee - <i>freshmen</i>	190	0	0
Dining ⁽²⁾	1600	1600	1600
Books & Supplies ⁽⁵⁾	966	966	966
Personal & Misc. ⁽⁴⁾	1335	1335	1335
Transportation ⁽⁴⁾	620	620	620
TOTAL	\$42,065	\$40,505	\$39,330
Off-Campus			
Tuition		\$35,580	\$34,405
Activity Fee		172	172
PAT Fee		72	72
Technology Fee		150	150
Media Fee		10	10
Orientation - <i>freshmen</i>		0	0
Room		5163	5163
Dining		3687	3687
Books & Supplies ^(3,4)		966	966
Personal & Misc. ⁽⁴⁾		1335	1335
Transportation ⁽⁴⁾		0	0
TOTAL		\$47,135	\$45,960

⁽¹⁾ Based upon cost of a standard double room. Your actual cost may differ.

⁽²⁾ The commuter dining amount is based upon a 10 meals plus \$8 DineXtra per two weeks.

⁽³⁾ Design and Architecture students add an additional \$510 for books/supplies.

⁽⁴⁾ These expenses will not appear on your Student Account Invoice. Transportation for resident and off-campus students varies based on home state.

NOTE: In addition, minimal health insurance coverage is required at an estimated cost of \$820 per year, unless a waiver is granted because you are covered under your family's health plan. Premium health insurance coverage is suggested for international students at an estimated cost of \$1,816 per year.

Campus Directory Additions/Changes

Computing Skills Workshop (CSW) is now Computing@Carnegie Mellon (C@CM)

Degrees Offered Additions/Changes

College of Fine Arts

Minor in Film and Digital Imaging

College of Humanities and Social Sciences

Minor in African and African American Studies

Philosophy

B.A. in Linguistics

Carnegie Institute of Technology

Please refer to the CIT website (www.cit.cmu.edu) to view minor updates to our curriculum since the printing of the 2006-2008 Undergraduate Catalog. The changes will also be reflected in the online PDF version of the catalog.

Department of Biomedical Engineering

The BME degree is now an Additional Major, not a Double Major.

Department of Civil and Environmental Engineering (*Class of 2010*)

Single Major

Sophomore Year

	Units
Fall	
12-235 Statics	9
15-100 Introductory / Intermediate Programming	10
21-259 Calculus in Three Dimension	9
09-101 Intro to Experimental Chemistry	3
09-105 Modern Chemistry I	10
xx-xxx H&SS Elective	9

50

Spring	
12-231 Solid Mechanics	9
12-232 Solid Mechanics Lab	3
12-271 Intro Computer Apps in Civil & Environmental Engr	9
21-260 Differential Equations	9
xx-xxx H&SS or CFA Elective	9
xx-xxx Elective 1	9

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Junior Year

	Units
Fall	
12-301 Civil and Environmental Engineering Projects	12
12-335 Soil Mechanics	9
12-336 Soil Mechanics Lab	3
12-355 Fluid Mechanics	9
12-356 Fluid Mechanics Lab	3
xx-xxx H&SS or CFA Elective	9

45

Spring	
12-351 Introduction to Environmental Engineering	9
12-352 Environmental Engineering Lab	3
27-357 Materials Selection	6
12-358 Materials Lab	3
36-220 Engineering Statistics and Quality Control	9
xx-xxx Elective 2	9
xx-xxx Elective 3	9

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Senior Year

	Units
Fall	
12-401 Civil and Environmental Engineering Design	15
12-411 Engineering Economics	6
xx-xxx H&SS or CFA Elective	9
xx-xxx Elective 4	9
12-xxx Elective 5	9

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Spring	
xx-xxx H&SS or CFA Elective	9
xx-xxx H&SS or CFA Elective	9
xx-xxx Elective 6	9
xx-xxx Elective 7	9
xx-xxx Elective 8	9

45

Minimum number of units required for degree: 373

Department of Engineering and Public Policy

EPP Economics Course Requirement

EPP has an economics requirement that is satisfied by 73-100. We have recommended that students take 73-150 in place of 73-100 if they wish to take advanced economics electives. We suggested this because 73-150 became a prerequisite for those courses. However 73-100 has now become a prerequisite for 73-150, making the substitution impossible. 73-150 can be counted as one of the four EPP social analysis electives.

Civil Engineering Double Major Curriculum Revisions

The Department of Civil and Environmental Engineering has changed the ordering and numbering of some courses. The curriculum chart on the following page shows the effects of these changes for Civil Engineering students in the EPP double major. These changes become effective with the Class of 2010.

Civil Engineering (Class of 2010)**Single Major****Sophomore Year**

	Fall	Units
12-235	Statics	9
15-100	Introductory / Intermediate Programming	10
21-259	Calculus in Three Dimension	9
09-101	Intro to Experimental Chemistry	3
09-105	Modern Chemistry I	10
xx-xxx	H&SS Elective	9

50

	Spring	Units
12-231	Solid Mechanics	9
12-232	Solid Mechanics Lab	3
12-271	Intro Computer Apps in Civil & Environmental Engr	9
21-260	Differential Equations	9
xx-xxx	H&SS or CFA Elective	9
xx-xxx	Elective 1	9

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Junior Year

	Fall	Units
12-301	Civil and Environmental Engineering Projects	12
12-335	Soil Mechanics	9
12-336	Soil Mechanics Lab	3
12-355	Fluid Mechanics	9
12-356	Fluid Mechanics Lab	3
xx-xxx	H&SS or CFA Elective	9

45

	Spring	Units
12-351	Introduction to Environmental Engineering	9
12-352	Environmental Engineering Lab	3
27-357	Materials Selection	6
12-358	Materials Lab	3
36-220	Engineering Statistics and Quality Control	9
xx-xxx	Elective 2	9
xx-xxx	Elective 3	9

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Senior Year

	Fall	Units
12-401	Civil and Environmental Engineering Design	15
12-411	Engineering Economics	6
xx-xxx	H&SS or CFA Elective	9
xx-xxx	Elective 4	9
12-xxx	Elective 5	9

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	Spring	Units
xx-xxx	H&SS or CFA Elective	9
xx-xxx	H&SS or CFA Elective	9
xx-xxx	Elective 6	9
xx-xxx	Elective 7	9
xx-xxx	Elective 8	9

45

Minimum number of units required for degree: 373

Civil Engineering With an Additional Major in Engineering and Public Policy**Sophomore Year**

	Fall	Units
12-235	Same	9
15-100	Same	10
21-259	Same	9
09-101	Same	3
09-105	Same	10
73-100	Principles of Economics	9
19-102	EPP Sophomore Seminar	3

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	Spring	Units
12-231	Same	9
12-232	Same	3
12-271	Same	9
21-260	Same	9
xx-xxx	EPP Social Analysis Elective	9
xx-xxx	Basic Science Elective (09-106, 33-104, or 03-121)	9

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Junior Year

	Fall	Units
12-301	Same	12
12-335	Same	9
12-336	Same	3
12-355	Same	9
12-356	Same	3
xx-xxx	EPP Social Analysis Elective*	9

45

	Spring	Units
12-351	Same	9
12-352	Same	3
27-357	Same	6
12-358	Same	3
36-220	Engineering Statistics and Quality Control	9
xx-xxx	EPP Social Analysis Elective*	9
19-451	EPP Project	12

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Senior Year

	Fall	Units
12-401	Same	15
12-411	Same	6
12-3xx	Restricted Elective Co Requisite for 12-401	9
36-XXX	2 nd EPP Stats Course (36-217 or 36-310)	9
19-452	EPP Project	12

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	Spring	Units
xx-xxx	EPP Social Analysis Elective	9
xx-xxx	EPP Social Analysis Elective	9
xx-xxx	EPP Technical Elective	9
xx-xxx	EPP Technical Elective	9
xx-xxx	EPP Technical Elective	9

45

Minimum number of units required for degree: 382

* One of these must be taken from the following list:

- 88-302 Behavioral Decision Making
- 88-223 Decision Analysis and Decision Support Systems
- 19-426 Environmental Decision Making

College of Fine Arts

Minor in Film and Digital Imaging

The minor requires students to complete a total of **54 units**. These 54 units include a total of **four production courses (36 units)** and **two photo/film history, theory or criticism courses (18 units)**. Photo/Film history, theory or criticism courses taken outside of Carnegie Mellon must be pre-approved by the advisor. Students in the College of Fine Arts will be advised by their individual schools and students outside the College will be advised by Jarrin Nevel in the College of Fine Arts, Room 100.

Students can choose:

Module A: 3 Film courses, 1 digital imaging course, and 2 photo/film theory, history or criticism courses

Or

Module B: 3 Digital Imaging courses, 1 film course and 2 photo/film theory, history or criticism courses

Minor in Photography

The Photography Minor exposes students to the breadth of photography offering experiences in traditional photography (i.e. film exposure and silver printing) to digital shooting and output. A total of 54 units are required to complete the minor.

Admission Requirements

1. A completed application form that includes permission from your home department advisor.
2. A one page personal statement stating why you want to minor in Photography and how the minor will benefit you in the future.
3. Your academic audit, (your grades).
4. A Portfolio. Your portfolio could be your final photography project from a college-level, beginning photography course.

•The above, 1-4, should be submitted to the Photo Equipment Office, MMB18 during business hours.

Portfolio Guidelines

Include 15-20 examples of your best photography. These images must be in hard copy form.

You may augment these images with digital images on a cd.

Prerequisite Course: 9 units

62-141 Black and White Photography 1 *OR*
60-141 Black and White Photography 1 *OR*
51-265 Black and White Photography 1

Required Courses: 27 units

62-241 Black and White Photography II 9 units
62-381 Color Photography and Digital Output 9 units
62-371 Photography, The first 100 Years 9 units
OR
62-360 Photography Since World War 11 9 units

Photography Elective (1) 9 units

Choose one additional photography course in consultation with the photo advisor from available courses.

History, Theory or Criticism of the Arts Elective (1) 9 units

Choose one (1) additional History, Theory or Criticism of the Arts course in consultation with the advisor.

Course Offerings: The following are courses that are offered in CFA; they change from semester to semester. Please consult the course catalogue and/or talk to Jamie Gruzka for the current offerings. Also, courses may be taken at Pittsburgh Filmmakers. Please refer to their course catalog that is available in the CFA Dean's office in CFA 100 or online at <http://pghfilmmakers.org>

62-141 Black and White Photography I (offered every semester)
60-141 Black and White Photography I (offered every semester)
51-265 Black and White Photography I (offered in the fall)
62-241 Black and White Photography II
62-381 Color Photography and Digital Output
51-338 Documentary Photography
62-245 Portraiture
62-266 The Constructed Photograph
62-325 View Camera
62-372 Photo Book
51-330 Photo Book

College of Humanities and Social Sciences

INTERDISCIPLINARY MINORS

African and African American Studies Minor

Edda L. Fields-Black, Faculty Advisor

Mission

The African and African American Studies minor will expose students to the following regions: sub-Saharan Africa, the Americas, and the Caribbean. Broad geographic coverage and a comparative framework encourage students to make connections between Africa and the African Diaspora, as well as among Diasporan communities. The minor offers undergraduate students the opportunity to undertake an empirical and theoretical examination of the cultural, political, social, and historical experiences of Africans and people of African descent. This unique minor brings together departments and colleges within the university and allows students to develop analytical skills particular to the arts, humanities, social sciences, public policy, and management. The African and African American Studies Minor is also designed to enable students a considerable degree of freedom in their choice of electives and independent research projects, including opportunities to study and conduct research in a relevant foreign language.

Requirements

- The minor is composed of 54 units- two core courses and four elective courses.
- The elective courses must include one project course.
- Students may take an additional two core courses as electives, but not more than four total courses.
- Students must take courses in at least two of the four regions (African, African American, Latin American, and the Caribbean) between their core and elective courses.

Core Courses (18 Units)

African

79-356/ 258 Introduction to African History I, II

African-American

76-335 Intro. To Race and Representation: African Americans and American Culture
79-241/242 African- American History I, II

Caribbean

79-253 The Development of Caribbean Culture

Elective Courses (36 Units)

African

- 79-162 Freshman Seminar: 'Slavery' and 'Freedom' in African History?
 79-267 Pre-Colonial West African History: 1100 to 1800
 79-268 From the Local to the Global: Globalization in East African History
 79-294 The Making of African Diaspora in the New World *¹
 79-317 Historical Memory and Historical Sources: Reconstructing Africa's Unwritten Past *
 82-304 The Francophone World **²

African-American

- 60-391 Special Topic: Hip Hop and Contemporary Art *
 57-480 History of Black American Music *
 76-143 Freshmen Seminar: Black Women Writing Freedom *
 76-144 Freshmen Seminar: The War against Cliché
 76-332 African American Literature and Culture: The Harlem Renaissance *
 76-332 Topics in African American Literature: Zora Neale Hurston*
 76-432 Critical Studies in Black Women's Writing: Freedom*
 76-432 Modernism and the Harlem Renaissance*
 76-432 Transnationalism and Diaspora in African American Expressive Culture*
 76-450 Senior Seminar- Image Identity Camera: African Americans and Film*
 79-158 Comparative Slavery and Emancipation in the Americas
 79-286 African Americans in Pittsburgh
 79-306 African American Urban History
 79-359 History of African American Families*
 79-382 African- American Women in US History*

Caribbean

- 76-335 Black' in the Union Jack*
 76-432 Transnationalism and Diaspora in African American Expressive Culture*
 79-294 The Making of African Diaspora in the New World*
 79-297 Freedom Bound: Slavery/Emancipation in Brazil & the Caribbean, 1789-1940
 82-188 Freshmen Seminar: The Uses and Abuses of Haiti
 82-304 The Francophone World**
 82-451 Studies in Latin American Literature & Culture- Cuba: Between Empire and a Hard Place* **
 82-454 The Hispanic Caribbean: Floating Continents, Whispering Voices; Rhyme, Reason and Song***

Latin American

- 79-297 Freedom Bound: Slavery/Emancipation in Brazil & the Caribbean, 1789-1940"
 79-364 Art, Anthropology, and Empire

(Footnotes)

¹ Denotes courses that require a research paper/ project.

² Denotes courses taught in a foreign language.

DEPARTMENT OF HISTORY

The following change is for the B.S. in Anthropology and History-page 249,B.S. in History and Policy-page 250 and B.S. in Social and Cultural History-page 251.

Students majoring in Anthropology and History, History and Policy and Social and Cultural History normally are awarded a B.A. degree. The B.S. degree is awarded when it is deemed appropriate after a review of a student's overall undergraduate record including second majors, minors, and elective courses. Students should consult with the departmental advisor about their course of study when declaring their major.

DEPARTMENT OF PHILOSOPHY

The Major in Linguistics

Director: Mandy Simons

Office: Baker Hall 155E

Email: simons@andrew.cmu.edu

Linguistics is the study of human language, and encompasses a broad spectrum of research questions, approaches and methodologies. Some linguists are concerned with the cognitive aspects of language learning, production and comprehension; some are concerned with language as a social and cultural phenomenon; others engage in the analysis of linguistic form and

meaning, some from a functional and others from a formal perspective. There are also computational approaches to linguistics with both applied and theoretical goals.

The Major in Linguistics reflects the multidisciplinary character of the field and of the Linguistics faculty here at CMU, offering a program which provides students with the fundamental tools of linguistic analysis while maintaining a focus on the human context in which language is learned and used. After completing their core courses, students can follow a concentration in one of three areas: Language in its Social Context, Language and Mind, or Language and Communication. Various specialized electives, including Language Technology courses, are available to students with the appropriate preparation. Students can choose to focus fairly narrowly on an area of particular interest, or to explore more widely.

The Major in Linguistics is available as either a primary major or an additional major. It is an ideal choice for students with a general interest in their own or other languages, and combines well thematically with studies in any of the departments represented in the major.

Curriculum

I. Required Courses

A. Fundamental skills (36 units)

Complete one course from each of the groups below. Additional courses from these groups may be taken as electives.

Introductory course

80-180 Nature of Language

Sounds

80-282 Phonetics and Phonology

Structure

80-280 Linguistic Analysis *or*

76-389 Rhetorical Grammar

Meaning

80-306 Meaning in Language *or*

76-385 Discourse Analysis

B. Language requirement (18-24 units)

Complete 2 semesters of language study in a single language. (Sequential courses)

II. Electives (45 units)

The electives are organized into three thematically coherent groups: Language in Its Social Context, Language and Mind, and Language and Communication. There is an additional set of specialized electives.

Students must complete 5 elective courses. At least three courses must be selected from one thematic group. The remaining two courses can be selected from any group or from the specialized electives.

Group 1: Language in its Social Context

- 76-244 World English
 76-318 Communicating in the Global Marketplace
 76-341 American English
 76-386 Language and Culture
 76-451 Topics in Language Study*
 76-490 Discourse and Identity
 82-358 Literacies across Language and Culture
 82-483 Topics in Modern Languages*
 82-384 Language and Culture: Language in its Social Context
 82-388 Understanding Second Language Fluency
 82-480 Social and Cognitive Aspects of Bilingualism
 82-585 Pragmatics and Second Language Learning
 82-891 Second Language Acquisition in a Study Abroad Context

Group 2: Language and Mind

- 76-420 Process of Reading and Writing
 80-281 Language and Thought (Philosophy)
 80-380 Philosophy of Language
 82-483 Topics in Modern Languages*
 82-280 Learning about Language Learning
 82-383 Second Language Acquisition
 82-480 Social and Cognitive Aspects of Bilingualism

- 85-354 Language Acquisition in Infancy and Childhood
 85-356 Music and Mind: the Cognitive Neuroscience of Sound
 85-421 Language and Thought (Psychology)
 85-455 The Discovery of Spoken Language

Group 3: Language and Communication

- 76-318 Communicating in the Global Marketplace
 76-357 Language, Power and the Law
 76-381 Contemporary Rhetorical Theory
 76-451 Topics in Language Study*
 76-457 Topics in Rhetorical Study*
 76-490 Discourse and Identity
 80-380 Philosophy of Language
 82-388 Understanding Second Language Fluency
 82-483 Topics in Modern Languages*
 82-585 Pragmatics and Second Language Learning

* A variety of different topics are taught under these course numbers. The suitability of the course as an elective in a given group will depend on the specific topic. Students should consult with the faculty advisor.

Specialized Electives

Courses in this group have prerequisites outside the Linguistics Major, but may be taken by any students with appropriate background.

- 82-277 The Japanese Language
 82-334 Structure of Chinese
 82-373 Structure of the Japanese Language
 82-444 Structure of Spanish
 85-356 Music and Mind: the Cognitive Neuroscience of Sound
 11-4XX Introduction to Natural Language Processing
 11-582 Language Technologies
 11-521 Grammars and Lexicons
 11-531 Machine translation
 11-541 Information Retrieval
 11-552 Speech: Phonetics, Prosodics, Perception, and Synthesis
 11-722 Grammar Formalisms

III. Senior Thesis (12 units)

In their senior year, typically in the Spring semester, students must complete a senior thesis under the direction of a faculty member of their choosing. The thesis project must be of a scope appropriate for the 12-unit course credit. Students who participate in the Honors program may combine their Honors thesis and Major thesis, as long as the thesis is of appropriate scope.

Students for whom Linguistics is an additional major may substitute an additional elective for the Senior Thesis requirement after consultation with the Faculty Advisor.

Mellon College of Science

B.S. in Biological Sciences/ Neuroscience Track

The BS in Biological Sciences/Neuroscience Track provides an option for those Biological Sciences majors who are interested in an intensive, curricular focus in neuroscience. The requirements of the Track are the same as those listed for the BS in Biological Sciences with the following changes to the biological sciences elective requirements:

Required Courses:

- 03-360 Biology of the Brain
 03-315 Magnetic Resonance Imaging in Neuroscience
 03-761 Neural Plasticity in Sensory and Motor Systems

Plus three of the following electives:

- 03-534 Biological Imaging and Fluorescence Spectroscopy
 03-350 Developmental Biology
 03-130 Introduction to Mammalian Physiology
 15-485 Computational Perception and Scene Analysis
 15-385 Computer Vision
 15-490 Computational Neuroscience
 85-211 Cognitive Psychology
 85-213 Human Information Processing and Artificial Intelligence
 85-219 Biological Foundations of Behavior

Mini courses of possible interest:

- 03-101 Nature & Nurture in Brain Development
 03-101 From Photons to Psychophysics
 03-204 Information, Entropy and Noise in the Brain

School of Computer Science

Minor in Computer Science

The Minor in Computer Science requires three Computer Science electives, not two (as was mistakenly indicated in the 06-08 catalog).